

# Entertainment as Trojan Horse: Voluntary Consumption of Propaganda in China

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## Abstract

In today's media-rich environment, how do authoritarian regimes effectively propagate their messages? This research delves into the strategies such regimes use, emphasizing the role of entertainment products, especially movies, as a medium for persuasive content. Analyzing films from China between 2011- 2021 and a survey experiment, we highlight the significant role of entertainment that either involves celebrities (i.e., personality-based entertainment) or presents an engaging story (i.e., narrative-based entertainment) in capturing audience interest. The effect of narrative-based entertainment is particularly prominent in reaching individuals typically resistant to propaganda. Additionally, audiences display a high tolerance for propaganda elements when woven into compelling storylines. Therefore, leveraging good entertainment as a medium for propaganda offers authoritarian leaders an effective strategy to cultivate a more extensive audience base, which is key to fostering a pro-regime popular culture.

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*“The easiest way to inject a propaganda idea into most people’s minds is to let it go through the medium of an entertainment picture when they do not realize that they are being propagandized.”*

– Elmer Davis, Director of U.S. Office of War Information<sup>1</sup>

## 1 Introduction

Propaganda is a mainstay of authoritarian rule. As noted by [Guriev and Treisman \(2019, 2020\)](#), most modern autocracies survive not by overt repression but by information manipulation that alters citizens’ perception of reality. In the study of propaganda, however, the issue of consumption is under-explored. What makes people living under authoritarianism consume political propaganda *voluntarily*? Answering this question is important to determining the effectiveness of propaganda in changing hearts and minds, as consumption is the key requisite step preceding persuasion.<sup>2</sup> This question is also important in its own right: what can an authoritarian regime do to increase the reach and depth of penetration of its propaganda?

Authoritarian regimes are often perceived as having a captive audience at home, such that dissemination of propaganda automatically translates into consumption. Although there are instances where governments aggressively disseminate propaganda or restrict access to alternative media, such tactics might not always be in their best interest. Excessive propaganda can incite fear, which in turn can deteriorate rather than enhance the public’s view of the regime. Engaging a willing audience, rather than drumming propaganda into people’s ears, could be a more fruitful strategy for regimes seeking true support from their citizens.

However, capturing a willing audience for propaganda has become increasingly challenging in today’s era of media saturation. This challenge is well-theorized: according to the seminal

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<sup>1</sup>[Koppen and Black \(1977\)](#).

<sup>2</sup>According to [Geddes and Zaller \(1989\)](#), individuals follow an “exposure-acceptance” two-step model when forming political opinions. They must first be exposed to – and consume – a message from the political elite before deciding whether to accept it as their own.

theory by Hovland, once individuals recognize propagandist indoctrination coming from political authorities, they become suspicious and likely disengage from the content ([Hovland, Janis and Kelley 1953](#)). Scholars also contend that pro-regime propaganda in media drives away audience and reduce consumption ([Gehlbach and Sonin 2014](#); [Shadmehr and Bernhardt 2015](#)). The negative relationship between propaganda and consumption is considered a significant constraint on authoritarian regimes' ability to effectively influence public opinions by biasing the information. This challenge is further underlined by a well-documented shift in media consumption patterns. With the emergence of diverse media platforms, especially the tidal wave of messages brought forth by social media, it is no longer viable for governments to monopolize public attention within this bustling information environment. Recent studies, such as those by ([Lu and Pan 2021](#)), highlight that authoritarian regimes now employ strategies like clickbait to capture audience attention.

In this paper, we study the strategy an authoritarian can use to overcome this challenge. We see propaganda as *multidimensional* in nature. In addition to the political indoctrination at its core, other dimensions of propaganda – including the format in which the indoctrination is packaged and the medium through which it is transmitted – can offer different utilities to potential consumers, thus influencing their decision to consume it voluntarily. In particular, we argue that the *entertainment value* of propaganda, defined as the capacity to bring audience leisure and enjoyment, is a potent force that encourages consumption.

In our study, we focus on movies, a popular form of mass entertainment and a staple in the authoritarian propaganda arsenal, as our testing ground to examine the factors contributing to the consumption of propaganda. We test our argument in the context of China, where the regime has dramatically reinvented its propaganda movies in recent years, giving rise to propaganda movies that are often seen as “Hollywoodized,” as indicated by various new reports. The first indication of entertainment’s power in drawing an audience to propaganda is the sizable viewership of these propaganda blockbusters, which, as the paper will demonstrate later, is largely voluntary: blockbuster titles such as *The Wolf Warrior II* and *The Battle at Lake Changjin* becoming top-grossers

of all time.<sup>3</sup>. At the same time, such success is not universality, as many other propaganda movies remain uninteresting to audience and perform poorly on the market. This variation in popularity poses an empirical puzzle: what factors make the audience choose some propaganda movies over others? More generally, what makes the Chinese public willing to spend time and money to see propaganda movies at all, when there are plenty of other alternatives in theater? The answers to these questions offer insights into the hidden formula for making people voluntarily consume propaganda.

We employ two empirical strategies to answer these questions. First, we analyze an original data set of all movies released in China between 2011 and 2021. We identify several aspects in movie production – including entertainment elements – and explore how they affect consumption of propaganda movies. Second, we conduct a survey experiment to investigate individual choice in propaganda consumption. Combining a word association test and a conjoint experiment, we disaggregate several salient dimensions of propaganda movies and estimate their respective effects on consumption.

Contrary to ([Lu and Pan 2021](#)), who argues that utilizing nonpolitical content with high entertainment value to further propaganda is not ideal for propagandists because it reduces the space devoted to political messages, we maintain that entertainment content can be an effective tool for authoritarian propaganda for certain purposes, especially when seamlessly integrated with propaganda in a singular product. We argue that an authoritarian regime can use entertainment as a Trojan horse to deliver political indoctrination to the masses. This strategy is especially useful for propagandists seeking a more subtle approach to disseminating their message rather than forcefully imposing it on an audience. It also allows for outreach to individuals typically averse to propaganda, instead of repeatedly targeting the same audience.

We first show that, important for this consideration, entertainment is a potent force that encourages the consumption of propaganda. Second, while propagandist entertainment might attract

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<sup>3</sup>Roughly speaking, *The Wolf Warrior II* had been viewed for over 159 million times in theater, and *The Battle at Lake Changjin* had been viewed for over 122 million times ([SOURCE](#))

a larger audience when it involves more entertainment celebrities (i.e., personality-based entertainment) or tells an engaging story (i.e., narrative-based entertainment), we find that the latter is especially powerful. The effect of narrative-based entertainment on consumption is universal across all groups and especially prominent among those who are least likely to consume propaganda in the first place. Telling a captivating story, rather than just catching eyeballs, might be a more universally effective way to draw people into propaganda. Third, we also find that, even though propaganda's effect on consumption may not be as pronounced as that of entertainment value, these propaganda messages can still hold mild appeal. Contrary to the common expectation that propaganda would heighten audience suspicion and reduce consumption, we find that Chinese viewers are quite tolerant of propaganda messages conveyed through movie storylines.

With these findings, this study makes several contributions. First, we approach the study of authoritarian propaganda in terms of consumption, which has not received systematic treatment by scholars. Existing studies have largely focused on the capacity of propaganda to persuade without addressing the issue of consumption (e.g., Adena et al. 2015) (**ADD MORE CITATIONS**). But understanding the difference in consumption are critical to understand how propaganda works in terms of persuasion. Studying consumption of propaganda is especially relevant in the current era when individual attention is the hottest commodity in short supply. How authoritarian regimes find ways to attract attention is key to their effectiveness in disseminating propaganda.

Our findings also highlight the importance of entertainment media for the purpose of propaganda. Authoritarian regimes use multiple methods and platforms for propaganda, including news, social media, and education. The appeal of entertainment, and the fact that entertainment media attract those who are initially averse to propaganda, and that people are tolerating of propaganda messages proves why it might play a unique role in this system. It enables the regime to spread intense political indoctrination without fear of losing audience, as good propagandist entertainment can be sought by a large audience.

Moreover, by decomposing propaganda into dimensions of political indoctrination and enter-

tainment value, we offer an analytical approach to understand different types of authoritarian propaganda. The existing literature provides a useful distinction between hard and soft propaganda, based on the different purpose each serves. While hard propaganda is usually classified as containing more intensive propaganda messages and use a subtler approach to package it, we go beyond the functionalist classification to uncover how different dimensions of propaganda affect how it is received by the public. Our research indicates that a slick presentation of propaganda messages plays a crucial role in their acceptance, and we have not identified definitive evidence suggesting that amplifying the intensity of these messages discourages consumption.

Lastly, we help people understand the political culture in China. Because public opinions are often unreliable measures in an authoritarian context due to the concern of preference falsification, news reports and Chinese citizens grapple with the rise of propagandist entertainment in China and wonder whether that is a meaningful indication of rising nationalism and rising support for the government. Our findings suggest caution is warranted when swiftly equating the consumption of propagandist entertainment with an affinity for propaganda. This is because the taste for entertainment content itself also features heavily in this complex equation.

## 2 Entertainment in Propaganda

### 2.1 Multidimensionality of Propaganda

At the heart of every piece of propaganda is a message of political indoctrination.<sup>4</sup> Yet, propaganda is multidimensional, as political indoctrination can take on different forms and be transmitted through different mediums. Put differently, the same indoctrination message can be packaged and disseminated in different ways to reach the targeted audience. These other aspects of propaganda, we argue, matter significantly to audience's willingness to consume it.

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<sup>4</sup>According to Kenez (1985, 4), propaganda is “nothing more than the attempt to transmit social and political values in the hope of affecting people’s thinking, emotions, and thereby behavior.” We broadly define any message with such values as political indoctrination.

From an individual perspective, a person would willingly to consume authoritarian propaganda if it provides her with certain utilities. For those who are ideologically aligned with the regime, they may voluntarily consume propaganda *because of* the underlying political indoctrination, as it validates their beliefs. For the majority of the population who are not ideologically zealous, however, propaganda must provide other utilities to appeal to them.

Among the many potential utilities that propaganda can offer, scholars have examined one closely: information. Propaganda is often disseminated through news, whose primary value to audience is accurate and timely information on real-world events. By providing information, propaganda can draw large audiences. At the same time, however, propagandist messaging often leads to bias in reporting and comprises the information value of news. For consumers seeking information, therefore, propaganda in the news media carries a *negative* utility that drives them away. Unless a regime resorts to coercive means, such as banning alternative news sources or monopolizing the media, the informational (dis)utility in propaganda reduces consumption.

However, information is but one considerations that influence people's decision to consume propaganda. As an authoritarian regime find outlets other than news to spread propaganda, the variety of formats and mediums through which propaganda is presented enables the regime to attract audience with other utilities. For instance, propaganda rallies create an occasion for people to gather and socialize, thereby providing an associational utility valued by many participants. Similarly, propaganda literature and arts may carry an intrinsic artistic value that many find appealing. These utilities create additional incentives for audience to consume propaganda. Moreover, unlike information, the appeal of these utilities is not undermined by propagandist messaging. These utilities that arise from the multidimensional nature of propaganda deserve to be examined more closely, in order to understand how – and why – ordinary citizens in authoritarian regimes consume propaganda out of their own volition.

In summary, consumption of propaganda – or the lack thereof – cannot be explained by its underlying political indoctrination alone. It has the capacity to provide various utilities that en-

courages consumption. In this study, we focus on one particular utility, entertainment

## 2.2 Entertainment: Gateway to Propaganda

Entertainment constitutes an important part of the media landscape in any country. By virtue of providing leisure and enjoyment, entertainment garners a lot of time and attention from average citizens. On the one hand, it siphons public attention away from news and politics (Prior 2005; Kern and Hainmueller 2009; Delli Carpini 2017). An experimental study finds that, when provided with access to an uncensored Internet, Chinese college students are more likely to seek out entertainment rather than political information Chen and Yang (2019). For authoritarian regimes, this property makes entertainment a useful tool to achieve stability with distraction (Xia 2022).

On the other hand, entertainment can also serve as a conveyor of political information or discourse. In democratic contexts, scholars find that entertainment-oriented soft news increases information exposure for the politically inattentive (Baum 2002, 2005). The emotional resonance carried by entertainment is also effective in shaping political opinions on topics such as foreign policy (Baum 2011; Coyne and Hall 2021) and socioeconomic issues (Kim 2023). Similarly, in authoritarian regimes, entertainment can have a durable effect on audience's political attitude by appealing to their emotions (Mattingly and Yao 2022).

In this study, we investigate the effect of entertainment on consumption of authoritarian propaganda. In particular, we focus on one popular form of entertainment, i.e., movies, which is widely used by authoritarian regimes for propaganda purposes. When discussing Soviet propaganda, Lenin once remark that, “for us the most important of all arts is the cinema” (Kenez 1985, 106). With the objective of promoting Communist ideology and creating a positive image of the regime, the USSR created and operated a sprawling state-controlled movie industry.

Although movies in general are considered entertainment, there exists significant variation among propaganda movies in terms of the level of leisure or enjoyment they bring to audience.

On one end of the spectrum, many propaganda movies are filed with trite doctrinaire or over-the-top praises for the regime and its leaders that are hardly enjoyable for anyone. These movies, as keenly observed by (Wedeen 1999), are not made for the purpose of changing the public’s mind about the regime. Rather, they are deployed to showcase the regime’s coercive strength and chill dissent. Such movies are what scholars call *hard propaganda* (Huang 2015, 2018), which does not rely on audience’s voluntary consumption to achieve its intended effect. Instead, their mere presence – or omnipresence, in some cases – is sufficient to convey the message, even when people do not pay close attention to the content.

On the other end of the spectrum, authoritarian regimes also use propaganda movies to win hearts and minds, i.e., as *soft propaganda* (Huang 2015). In order to get spread the propagandist message, a movie must first draw audience’s attention to its content. This is where the entertainment value of movies, defined as the capacity to provide leisure and enjoyment, becomes a key factor. Compared with hard propaganda movies that are “crude and heavy-handed,” soft propaganda movies are often more “subtle and sleek” (Huang 2018). As pointed out by Mattingly and Yao (2022), the latter are often “disseminated in slickly produced and entertaining media.”

In this paper, we argue that, the *entertainment value* in propaganda movies serves as an important gateway to political indoctrination. By luring audience in with entertainment elements, propaganda movies can hold their attention while exposing them to pro-regime messages.

### **Personality-Based vs. Narrative-Based Entertainment**

While the argument of entertainment and consumption is intuitive, more clarity is needed on what elements in a propaganda movie are perceived as entertaining by audience. Building on existing literature in communication theories, we conceptualize and identify two distinct, but not mutually exclusive, categories: (1) personality-based entertainment, where viewers are drawn to specific individuals involved in a movie, e.g., famous actors, directors, and other celebrities; and (2) narrative-based entertainment, where viewers derive enjoyment from the storytelling of a movie.

The appeal of *personality-based entertainment* is straightforward. Celebrities in popular culture garner a lot of public attention. When involved in a propaganda movie, they generate interest and bring people to the theater, especially those who are politically inattentive or in opposition. In fact, the appeal of entertainment personalities can at times overcome ideological differences when it comes to consumption of propaganda. In the Nazi regime, people with little formal education saw ideological movies for the sake of star actors; notably, even some Jewish citizens and resistance fighters would see these movies as they featured their favorite performers such as Zarah Leander and Heinz Rühmann ([Suchsland 2017](#)).

In addition to entertainment personalities, audience is also drawn to narratives storylines in movies. The power and appeal of narrative has been studied extensively: by fostering experiences such as absorption, transportation, immersion, or engrossment, narrative can engage audience cognitively and emotionally ([Slater and Rouner 2002](#); [Green, Brock and Kaufman 2004](#)). By telling a good story with compelling characters and exciting plot twists, a movie creates “narrative involvement” for its viewers, which not only provides vicarious enjoyment, but also makes them more open to the underlying messages in the story ([Moyer-Gusé 2008](#)). We classify such elements in movies as *narrative-based entertainment*.

Although there is no single standard to determine what qualifies as narrative-based entertainment, people are generally drawn to stories with greater drama and human interests, e.g., those with characters that audience can identify with, rather than stories with dry facts and hollow slogans. The effectiveness of narrative-based entertainment has been noted by propagandists. During World War I, in order to rekindle waning public attention on the war, the British government introduced a new genre of narrative fiction movies with dramatic, character-centered plots.<sup>5</sup>

While there may be other types of entertainment, in this study we identify personalities and narratives as two elements salient to the consumption of propaganda. In the empirical analysis, we

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<sup>5</sup>In its war propaganda efforts, the British government noticed that, after some initial success with factual films that depicted the latest development of war, public interest had declined. The War Office Cinematography Committee (WOCC) diagnosed that such films lacked “human interest” and the public needed “something more dramatic” to “tickle its palate.” Following this recommendation, a new genre of narrative fiction films were created ([Reeves 1993](#)).

test the following hypotheses.

*H1a. On average, propaganda movies with more entertainment personalities attract larger audiences.*

*H1b. On average, propaganda movies with more entertaining narratives attract larger audiences.*

## 2.3 Political Indoctrination via Entertainment

While we focus primarily on the effect of entertainment in this study, we also investigate how political indoctrination, when presented via a medium of entertainment, may affect consumption of propaganda.

The existing literature suggests a negative relationship between political indoctrination and consumption in the news media ([Gehlbach and Sonin 2014](#); [Shadmehr and Bernhardt 2015](#)). In the realm of arts and entertainment, the distinction between hard and soft propaganda also suggests that heavy-handed indoctrination often arouses suspicion and annoyance in viewers, thus driving them away. On the other hand, entertainment programs with intense political indoctrination fare quite well in some regimes. For example, a specific genre of political movies in the Soviet Union, known as *agitki*, were highly popular with the masses despite its explicit ideological messages.<sup>6</sup>

This seeming inconsistency, we argue, stems from the multidimensional nature of propaganda. Audience have different objectives when consuming propaganda, depending on the utilities it can provide; correspondingly, the political indoctrination in propaganda interacts with these objectives differently to influence audience's consumption decision. For example, most people tune into news to obtain accurate information; as political indoctrination in news becomes more intense, it directly undermines this objective. In contrast, when people consume an entertainment program for leisure

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<sup>6</sup>These were short films produced for audiences with little education. They usually told a simple story with a clear political or educational message. It was reported that audiences enjoyed them and constantly asked for more ([Kenez 1985](#)).

and enjoyment, this objective is less adversely affected by political indoctrination. If this is the case, even when viewers recognize propagandist messaging in an entertainment program, they may not reduce consumption.

It thus remains an open empirical question on how indoctrination affects audience's willingness to consume propaganda movies. We test the following hypothesis.

*H2. On average, propaganda movies with different levels of political indoctrination are consumed differently by audience.*

It is worth re-iterating that all hypotheses proposed in our study are concerned with audience willingness to *consume* propaganda movies; it is beyond the scope of this study to examine any changes in audience's political attitude as a result of consumption. For each hypothesis, in addition to estimating the average effects of *entertainment value* and *political indoctrination*, respectively, we also explore their heterogeneous effects across different groups in the population.

### 3 Propaganda Movies in China

For the Chinese Communist Party (CCP), propaganda has been – and continues to be – an indispensable instrument to attain political power and maintain its rule. Even in its early revolutionary days, CCP was adept at using popular culture and entertainment for propaganda. The party paid close attention to “cultural governance” to bolster its popular appeal; devices such as makeshift theater was used to engage the masses to great effect ([Perry 2017](#)).

The Chinese movie industry has undergone several transformations under the rule of CCP. In the early years of the People's Republic, the industry was nationalized to produce ideological movies, which were promoted and distributed with considerable state resources. Many of these movies penetrated the Chinese society and became culturally influential. However, their popularity might in large part stem from the lack of entertainment alternatives.

Following China’s economic reforms in the 1980s, the movie industry gradually transitioned away from central planning to a more market-oriented model. The transition challenged the dominance of propaganda movies, as they no longer had a monopoly of the market and they did not align with audience taste. As more non-political movies appeared, propaganda movies suffered.<sup>7</sup> The situation was exacerbated when Hollywood movies were allowed to enter the Chinese market in 1994. For state-owned movie studios tasked with making propaganda movies, they now faced competition from the private sector driven by economic rather than political incentives; private companies became an even greater threat after they received legal recognition in the early 2000s, which allowed them to make movies independently without collaborating with a state-owned entity. Throughout the 1990s and 2000s, although state-owned studios continued to make propaganda movies, they had to rely heavily on government subsidies, as these movies had little commercial success, let alone any cultural influence ([Zhu 2003](#)).

### 3.1 Emergence of Main Melody Movies

The marketization of the movie industry, however, does not mean the CCP has given up using movies for propaganda purposes. Rather, it sought to reposition propaganda movies in a more diversified entertainment landscape: instead of being the only choice for consumers, propaganda movies should be the main melody to lead and harmonize the many other voices in the ideological discourse in cinema. A new term, *main melody movies*, was coined by the state in 1987, to represent an effort to “highlight the main melody while preserving diversity” in the movie market ([SOURCE?](#)). This label has since become a synonym for propaganda movies in the contemporary era. It is used by critics and viewers alike to refer to movies with overt political indoctrination, but also sometimes balanced by artistic and creative expressions.

Main melody movies do not differ much from their predecessors in terms of their political

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<sup>7</sup>The head of the film bureau at the Ministry of Radio, Film and Television acknowledged that the Chinese movie industry was faced with a “colossal” financial crisis, because it was making “politically correct movies” that few would want to see ([Sterngold 1990](#)).

objective. However, they have taken on some important traits that endear them to the audience, making them more competitive on the market. Over the last two decades, through trial and error, the movie industry has figured out a formula for making commercially successful main melody movies. An early success came in 2009 with the movie, “The Founding of the Republic,” which portrayed Chinese revolutionary leaders with an all-star cast. It broke the mold that national leaders must be played by special typecast actors for the sake of likeness; instead, it cast many celebrities such as Jackie Chan and Jet Li to appeal to a wide range of demographics. Although the movie received poor critical reviews for its regurgitation of political ideology, it proved to be a hit at the box office.

In the following decade, main melody movies continued to evolve and incorporate more entertainment elements, such as well-produced battle scenes and action sequences. Most notably, many shifted away from rigid narratives focusing on the glorification of the party and its leaders; instead, they told stories about individuals – often ordinary people – against the larger political backdrop. This new recipe has given rise to a new crop of propagandist blockbusters, such as *The Wolf Warrior II* and *Operation Red Sea*, that were not only commercially successful but also culturally popular. Moreover, production companies in the private sector, seeing the profitability of making main melody movies, started to foray into this endeavor, applying their market expertise and resources to tailor propaganda movies that cater to the taste of average Chinese viewers.<sup>8</sup>

The rising popularity of main melody movies in China has been widely observed. The *Economist* remarks that, “[p]atriotic blockbusters are so entertaining people willingly buy tickets.”<sup>9</sup> It is striking that Chinese viewers are willing to not only spend time but also pay good money to consume pro-regime propaganda. Scholars and observers have offered several interpretations of this phenomenon. One version attributes the popularity of main melody movies to rising nationalist sentiment, which has led the public to simply prefer movies that drum up national pride (?Morrison

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<sup>8</sup>Based on data we collected, between 2011 and 2021, private companies were the lead producer for 17.6% of all main melody movies. They also participated in the production and marketing of many other main melody movies.

<sup>9</sup>The Economist. Jan 22, 2022. “How Chinese Propaganda Films Became Watchable.”

2021). Alternatively, some argue that this new wave of propaganda movies carry more nuanced messages that do not simply echo the official ideology, which might be more welcome by the audience (Jane Yang, CITE). Still others contend that it has to do with the intensity of political indoctrination in these movies; those that do well at the box office tend to be more subtle in its propagandist messaging (Yau; CITE).

While each of these explanations may be valid to a certain extent, so far there is no systematic empirical evidence to adjudicate between them. More importantly, all three focus on political indoctrination, which is but one aspect of propaganda movies. Considering that, for each propaganda blockbuster, several other movies with similar political messages struggle to attract any audience at all, we cannot attribute the popularity of main melody movies to political indoctrination alone. In this paper, we examine the *entertainment value* of propaganda movies to understand what drives their consumption in China today.

## 4 Research Design

To test the proposed hypotheses in the context of contemporary Chinese propaganda movies, i.e., *main melody movies*, we adopt two empirical strategies. First, we collect and analyze observational data at the movie level to identify elements in propaganda movies that correlate with their consumption. Next, we design and implement a survey experiment to disaggregate various dimensions of propaganda movies and estimate their causal effects on consumption at the individual level. Combined, these two empirical strategies complement each other to delineate the micro-foundation of propaganda consumption.

## 4.1 Observational Analysis

### 4.1.1 Data

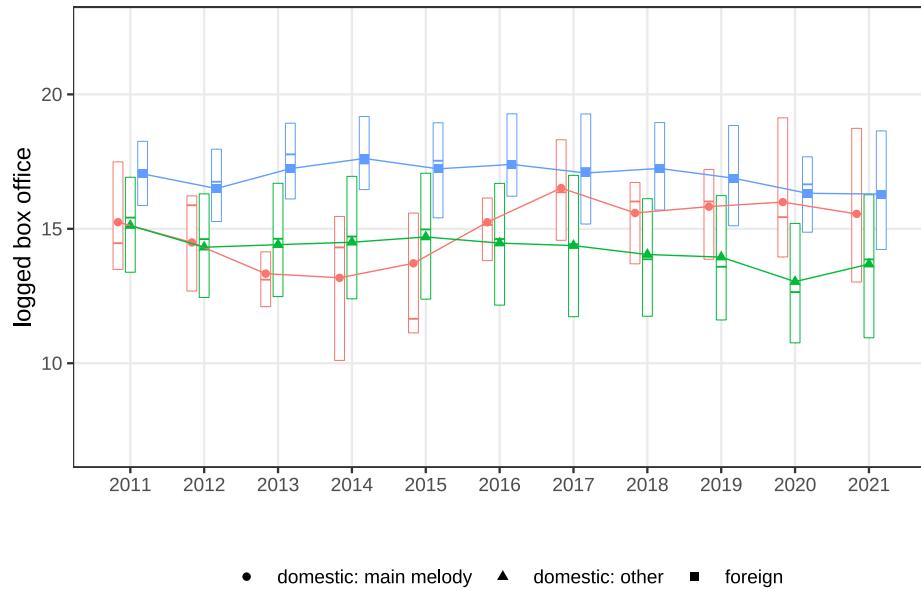
Using web-scraping techniques, we construct an original data set of *all* movies released in China between 2011 and 2021. To collect comprehensive information on each movie, we use two sources to complement and corroborate each other: Douban and Endata.<sup>10</sup> The assembled data set yields a total of 3956 domestic movie titles, each with information on its release date, synopsis, main cast and director, production companies, and box office performance. Moreover, the data set contains important audience-generated information on each movie, such as ratings, genre classification, and keyword tags. Besides domestic movies, the data set also includes 968 imported foreign movies.

A key task in constructing the data set is the identification of propaganda movies, as there is no such official designation. We take an audience-oriented approach and rely on the user-generated classification on the two websites. Specifically, we classify movies with a “main melody (MM)” label for genre as propaganda movies. In total, there are 196 main melody movies in the data set, approximately 3.98% of all movies or 4.95% of domestically produced movies.

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<sup>10</sup>Douban (<http://www.douban.com/>) is an IMDb-like site in China that is often regarded as the most authoritative website that catalogs various forms of entertainment, including movies and TV series. In addition to production details on each movie, it allows for user input, which provides richer information such as ratings and keyword tags. Endata (<https://www.endata.com.cn/>) is a Chinese website that tracks commercial performance of movies.

Figure 1: Box Office Performance by Movie Type



*Note:* The connected lines report the yearly mean of average logged box office for main melody movies, other domestic movies, and foreign movies, respectively. Each vertical box represents the interquartile range and the solid dash in the box represents the median value.

Our data show that, indeed, main melody movies have become more popular (Figure 1). Their average box office performance improved over time, surpassing that of other domestic movies in 2016 and almost rivaling foreign movies, which are typically blockbusters.<sup>11</sup> Additionally, main melody movies have expanded their market share in terms of number of titles and total box office (See Figure A1 A1 in Appendix.) Equally important, Figure 1 illustrates substantial variation among main melody movies in terms of box office performance, as indicated by the large interquartile ranges. It shows that not all main melody movies are popularity with audience.

In the analysis that follows, to form a useful baseline of comparison, we exclude foreign movies from the data set and focus on domestically produced movies (n=3956).

<sup>11</sup>Because China imposes a strict quota on the number of foreign movies imported each year, those that make it into the Chinese market tend to be high-grossing blockbusters, hence the sustained high box office performance in Figure 1.

#### 4.1.2 Measuring Key Variables

**Box Office Performance.** To measure movie consumption, we look at each movie's performance at the box office. We consider ticket sales at the box office the most credible indicator of audience's propensity to consume a movie, as it incurs both a time cost and a financial cost. We recognize several potential issues with this measure. First, a movie's box office is determined not only by demand, but also supply-side factors, such as scheduling by movie theaters. It is possible that some movies receive more or better screening times that help boost sales. While we do not have data on scheduling to directly control for it, it is reasonable to argue that scheduling is done largely in anticipation of market demand, as most Chinese movie theaters are privately owned and operate based on market incentives. Another concern is that box office performance of main melody movies might be artificially propped up by the government, with methods such as ordering schools and workplaces to organize group viewing sessions. To address these two concerns, in addition to analyzing the full sample, we conduct subsample analysis with propaganda movies only. Lastly, there is likely a peer effect on box office: popular movies tend to generate more media buzz, which in turn prompts more people to see them; as a result, the distribution of box office is highly skewed to the right. To take this concern into account, we use *logged box office* as the main outcome of interest, which has a close-to-normal distribution (see [Figure A2](#) in Appendix).

**Personality-Based Entertainment.** To quantify personality-based entertainment in a movie, we look at the entertainers involved in its production and their respective market appeal, including the leading cast members and director(s). Generally, celebrity entertainers draw larger audiences, either because of their large fan bases or their reputation associated with high-quality productions.

We first measure every entertainer's yearly market appeal at the individual level, by calculating her cumulative box office record in a given year, as measured by the sum of box office of all movies she has participated in between 2011 and that year. By taking into account both the number of her appearances and the popularity of each appearance, this measure reflects her market share in the movie industry. An entertainer with greater market appeal is expected to have a higher cumulative

box office.<sup>12</sup>

We then create two movie-level variables by aggregating entertainer-level information. For each movie, we calculate its *star power* by taking the mean of its three leading cast members' logged market appeal; we also calculate its *director appeal* by taking the mean of its directors' logged market appeal. Together, these two variables reflect the degree to which a movie incorporates personality-based entertainment.

**Political Indoctrination.** To measure the level of political indoctrination in each movie, we look at its user-generated keyword tags on Douban. The tagging process is open-ended: when rating or bookmarking a movie, users can add tags – either existing or new – that reflect their opinion or perception of the movie. For each movie, the top eight tags are displayed on its page and hence recorded in the data set.

Based on manual reading, we identify several common tags most representative of political indoctrination: *main melody*, *positive energy*, *love of country*, and *red movie*.<sup>13</sup> These tags capture different aspects of political indoctrination: some focus on the country or nation, whereas others center on the party or the regime. We expect that, when political indoctrination is less intense (or absent) in a movie, it is labeled with fewer (or no) such tags; conversely, movies with more heavy-handed indoctrination are likely to be labeled with more such tags. Thus, we construct a variable, *political indoctrination*, that records the number of political keyword tags that each movie has.

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<sup>12</sup>To measure each entertainer's market appeal, we take the sum rather than the mean of movie box office, as it evens out randomness in the data (e.g., actors who are one-hit wonders). Within this approach of taking the sum, we consider two options: a cumulative measure that calculates an entertainer's box office between 2011 and a given year, and a total measure that adds up her box office for the entire period of 2011-2021. We choose the cumulative measure, as it indicates an entertainer's market success up to a point in time. We also recognize that the cumulative measure suffers from the fact that, as the Chinese movie market expanded rapidly, movie box office becomes inflated over time. To counter this, we also calculate each entertainer's market appeal in total terms and use it as an alternative measure in the robustness checks.

<sup>13</sup>It should be noted that the term “main melody” is used by Douban viewers for both movie genre classification and keyword tag. We use the former to identify propaganda movies in the data set; we use the latter as one of the several keyword tags to measure political indoctrination. Among the 196 movies in the main melody genre, 101 have the “main melody” tag; for comparison, none of the 3760 other movies has the “main melody” tag.

### 4.1.3 Estimation Model

We estimate the effects of *personality-based entertainment* and *political indoctrination*, respectively, on propaganda consumption at the movie level, with the following OLS model:

$$box_{ijt} = \Sigma \beta celeb_{ijt} + \delta indoct_{ijt} + \gamma_j + \theta_t + \epsilon_{it} \quad (1)$$

where  $box_{ijt}$  is the logged box office of movie  $i$  of genre  $j$  in year  $t$ ;  $celeb_{ijt}$  measures the degree of personality-based entertainment in the movie with variables *star power* and *director appeal*;  $indoct_{ijt}$  measures the level of *political indoctrination* in a movie;  $\gamma_j$  represents the genre fixed effects;<sup>14</sup>  $\theta_t$  represents the year fixed effects; and  $\epsilon_{it}$  represents any idiosyncratic differences that are correlated across movies within each year.

## 4.2 Survey Experiment

The observational analysis outlined above tests hypotheses concerning *personality-based entertainment* and *political indoctrination*. Due to lack of relevant information, we are unable to test the effect of *narrative-based entertainment*.

More importantly, while there are significant advantages of using observational data, such as high external validity, the analysis suffers from a few drawbacks. First, the data is at the movie level, such that any estimated effect would be an average across all audience members. We are unable to examine individual-level variation and explore how various audience groups may respond to different elements in a movie. Second, and more important, the observational data only measures certain aspects of movies and thus suffers from omitted variables. This is especially problematic given the high-dimensional nature of propaganda movies.

To overcome these limitations, we resort to a survey experiment, which disaggregates several

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<sup>14</sup>We control for the five most popular movie genres, as indicated by respondents in our survey based on quota sampling, including comedy, sci-fi, action, romance, and suspense/thriller. At least one third of all respondents chose each of these genres as movies they like to watch.

key dimensions of propaganda movies and estimate their respective effects on consumption at the individual level. In its implementation, we partnered with a survey firm in China to recruit respondents and distribute the survey online. Using quota sampling, we draw a sample of respondents to match the Chinese adult population on key demographic characteristics, including gender, age, and education.<sup>15</sup> The survey took place between April and June in 2022, and yielded a total of 598 valid responses at the individual level.

#### 4.2.1 Survey Design: Word Association Test & Conjoint Experiment

The survey experiment serves two purposes: 1) to replicate parts of the observational analysis on the effects of *personality-based entertainment* and *political indoctrination* and 2) to take a closer look at movie storytelling and investigate the effect of *narrative-based entertainment*.

To this end, we build two main components in the survey: a word association test (WAT) and a conjoint experiment. In the WAT, we ask respondents to read and react to a series of randomized movie synopses. In the conjoint experiment, we ask them to rate a series of hypothetical movie profiles that incorporate the synopses they have just read, along with other attributes such as cast members and directors. In addition, the survey asks a series of demographic questions as well as questions on respondents' political attitude and movie-viewing preferences.<sup>16</sup>

While the conjoint design is fairly conventional, we combine it innovatively with a closed WAT to disaggregate movie storytelling into two dimensions of interest, namely *narrative-based entertainment* and *political indoctrination*. Because we have no prior knowledge on how these dimensions are distributed or related with one another, it is important that we delineate and measure them *not* based on our own presumptions as researchers, but as perceived by the audience. Thus, rather than directly building *narrative-based entertainment* and *political indoctrination* as two pre-

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<sup>15</sup>We recognize that online samples, even when drawn with built-in quotas, suffer from certain selection biases (i.e., younger in age, more concentrated in urban areas, etc.). This, however, might be less of a serious issue for the purpose of this study, as we are primarily interested in the segment of the Chinese population that makes up the majority of its movie audience, which tends to be urban and young in the first place.

<sup>16</sup>See Figures A6, A7, A8 and Tables A4 and A5 in Appendix for survey design.

determined attributes, we use movie synopsis as a composite attribute in the conjoint design and decompose it into these two dimensions based on respondents' input in the WAT.

This audience-oriented approach allows us to understand how Chinese audience perceives different types of movie synopses; it also sheds light on the relationship between *narrative entertainment* and *political indoctrination* in movie storytelling. Moreover, as each respondent encounters the same batch of movie synopses in both the WAT and the conjoint experiment, we can directly observe how their perception of each movie synopsis affects their consumption choice. The WAT also offers a practical advantage: because movie synopses are significantly longer than other attributes in the conjoint design, by asking respondents to read them first in the WAT, we make sure they pay sufficient attention to each synopsis and have time to digest it properly.

#### 4.2.2 Selecting Movie Synopses

A key step in the survey design is deciding what movie synopses should be used. To maximize the external validity of the survey and keep things realistic for respondents, rather than creating fictitious movie synopses, we use synopses from actual movies drawn from the observational data set.

From a design perspective, it might be tempting to use fictitious movie synopses that would allow us to build in distinct dimensions of interest and randomize them more cleanly. This would also eliminate the issue of respondents' pre-existing opinions on actual movies. However, because movie stories are high-dimensional, creating fictitious ones essentially involves reducing synopses into a few dimensions of arbitrary choice. Any findings from analyzing these synopses are likely driven by design effects and have little external validity. Moreover, it is unfeasible and unrealistic to create a set of synopses that are balanced across relevant dimensions. For instance, it is hard to conceive two synopses that are identical in all aspect except for the underlying political indoctrination. Even if we could create two such synopses, the non-propaganda one would likely misrepresent the majority of non-propaganda movies in China today. Based on these considera-

tions, we believe synopses from actual movies are a superior choice.

To get the most analytical leverage, we first draw a sample of actual movies balanced on propaganda (i.e., MM vs. other) and box office (i.e., high-performing vs. median-performing). For each year between 2011 and 2021, we randomly select one high-performing MM movie and one high-performing non-MM movie, both from the 20 top-grossing movies that year; similarly, we randomly select one median-performing MM movie and one median-performing non-MM movie from the median box office range. Altogether, the selection process yields a total of 43 movies, i.e., 21 propaganda movies and 22 non-propaganda movies.<sup>17</sup>

We then pull the synopsis from each movie in the sample. To present the synopses in the survey, we keep them relatively uniform in length and take out possible identifiers, such as character names or prominent locations, so that respondents would not recognize these movies. These steps help eliminate factors that could bias the responses.

#### 4.2.3 Decomposing Movie Storytelling

In the closed WAT, each respondent is presented with 10 movie synopses, randomly drawn from the sample of 43. One synopsis at a time, the respondent is asked to read it carefully and choose from a list of keywords those that most closely describe their impression of the movie.

The list consists of 14 keyword that commonly appear as tags used to label movies on Douban. Among them, three reflect *narrative-based entertainment*, including “riveting,” “engrossing,” and “thrilling;” four reflect *political indoctrination*, including “main melody,” “positive energy,” “love of country,” and “red movie;” and seven others are placebos (see [Table A4](#) in Appendix for the full list). To keep things consistent, we use the same keywords for *political indoctrination* as in the observational analysis.

Based on respondents’ input, we measure *narrative-driven entertainment* and *political indoctrination* by counting the number of relevant keywords chosen. We first record these scores at the

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<sup>17</sup>For year 2012, there was no MM movie in the top 20 box office list, so we left it vacant.

respondent level and then aggregate them at the movie level by taking the mean. In our analysis, we use the movie-level mean values; we also use the respondent-level scores as a robustness check.

By decomposing each movie synopsis into *narrative-driven entertainment* and *political indoctrination*, the WAT accomplishes two things. First, it provides a descriptive understanding of MM and non-MM movies are distributed along these two dimensions. Second, we use the decomposed scores in the following conjoint analysis to estimate how each dimension affects audience's consumption of propaganda movies.

#### 4.2.4 Conjoint Movie Profiles

Following the WAT, a respondent is presented with a conjoint experiment that asks her to compare five pairs of hypothetical movie profiles, each consisting of five attributes, including synopsis, lead actor, lead actress, director, and online movie rating. To ensure consistency and continuity, a respondent encounters only the synopses she has previously read in the WAT.

Besides synopsis, the other attributes in the movie profile largely replicate the observational data analysis. For *lead actor* and *lead actress*, and *director*, they each take on two values: famous and non-famous.<sup>18</sup> These three attributes are designed to estimate the effect of *personality-based entertainment*. In addition, the attribute *online rating* serves as a proxy of movie quality with three distinct values: 6.8, 8.0, and 9.2 on a 10-point scale, which roughly mirror the first, second, and third quartiles in the observational data set.

Upon reading a pair of hypothetical movie profiles, a respondent is asked to choose her preferred movie to see (i.e., a forced-choice outcome) and then rate her interest in seeing each movie (i.e., a rating outcome). In the analysis, we use the forced-choice as the primary outcome of interest

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<sup>18</sup>In each of these attributes, for the “famous” category, we draw 10 names from the observational data with the highest box office record; similarly, for the “non-famous” category, we draw 10 names with a median-range box office record. We use multiple names for each attribute value in order to even out the idiosyncrasies associated with particular entertainers or respondents’ idiosyncratic tastes. When selecting names, we make sure there are no famous names in the non-famous category and vice versa; we also exclude names of foreign actors and typecast actors who would not fit in a generic movie story.

and the rating outcome as a robustness check.

#### 4.2.5 Estimation Model

Using data collected from the survey, we estimate the average marginal component effect (AMCE) of each attribute value in the conjoint design.

$$Y_{ir} = \alpha_0 + \beta_1 \text{narrative}_{ir} + \beta_2 \text{indoctr}_{ir} + \sum_l^4 \sum_d^{D_l} \gamma_{ld} X_{ldir} + \epsilon_{ir} \quad (2)$$

where  $Y_{ir} \in \{0, 1\}$  represents the consumption choice by respondent  $r$  in a pairwise comparison,  $\text{narrative}_{ir}$  and  $\text{indoctr}_{ir}$  each measure *narrative-based entertainment* and *political indoctrination* scores of the synopsis in movie profile  $i$  evaluated by respondent  $r$ ,  $X_{ldir}$  is the dummy variable for the  $d^{th}$  value of a non-synopsis attribute  $l$  and  $\gamma_{ld}$  is the corresponding coefficient, and  $\epsilon_{ir}$  is the error term, which is statistically independent of the regressors due to randomization of attributes. The OLS estimates of  $\beta$  and  $\gamma_{ld}$  are the AMCE estimates for various attribute values, with White cluster-corrected standard errors to account for within-respondent correlation of preferences.

Moreover, we conduct heterogeneous effect analysis by estimating Equation 2 for various subgroups of respondents. We are especially interested in groups that are least inclined to consume propaganda on their own.

## 5 Main Results

### 5.1 Observational Evidence

We begin with the observational data. As a first step, we estimate a simple OLS regression of logged box office on *main melody* to gauge the overall popularity of propaganda movies with audience. As reported in Table 1, on average, MM movies fare significantly better than non-main melody movies, even after controlling for year and genre fixed effects.

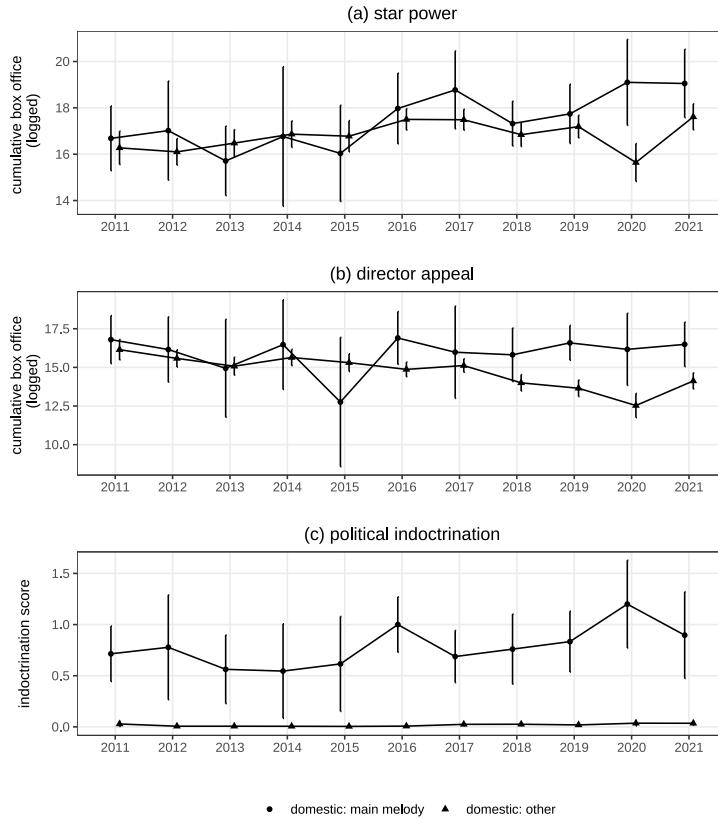
Table 1: Mass Consumption of Main Melody Movies

DV: logged box office	(1)	(2)	(3)
main melody	0.999*** (0.243)	1.073*** (0.251)	1.566*** (0.246)
Year F.E.			✓
Genre F.E.		✓	✓
Obs.	3588	3588	3588
Adj. R <sup>2</sup>	0.004	0.018	0.101

Note: All estimates are based on OLS regressions of logged movie box office. Robust standard errors are reported in parentheses.

+ $p < 0.1$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

Figure 2: Movie Attributes by Type



Note: Each of these plots reports the yearly mean value of a specific attribute, including *star power*, *director appeal*, and *indoctrination intensity*, for MM movies and other domestic movies, respectively. The vertical bars represent 95% confidence intervals.

To identify the source of their popularity, we look at whether propaganda movies differ from non-propaganda movies, by plotting the yearly mean of *star power*, *director appeal* and *political*

*indoctrination*, respectively. As shown in [Figure 2](#), over time, MM movies have incorporated more entertainment personalities in their production (plots a and b). As a category, they surpassed non-MM movies in the use of famous actors and directors in 2016, which coincides with their rise in popularity ([Figure 1](#)). Meanwhile, as expected, MM movies contain more intense political indoctrination (plot c).

Next, we investigate whether these differences have any effect on consumption by estimating [Equation 1](#). In Panel A of [Table 2](#), we perform the estimation using all movies. We first regress logged box office on personality-based entertainment and political indoctrination separately (columns 1 and 2); we then conduct a horse race and further control for online rating, which is a proxy for overall movie quality (columns 3 and 4); lastly, we add the *main melody* dummy to the model. Across all specifications, the coefficient estimates of *star power* and *director appeal* are consistently positive and statistically significant, indicating a positive effect of personality-based entertainment. Moreover, the coefficient of *main melody* in column (5) becomes statistically insignificant, in contrast to earlier results in [Table 1](#); it suggests that *star power* and *director appeal* are a main source of popularity for main melody movies. In Panel B, we estimate the model with main melody movies only. The results are highly consistent: *star power* and *director appeal* are positively and significantly correlated with box office performance. These results provide clear evidence in support of hypothesis H1a: propaganda movies with greater personality-based entertainment are more popular with audience.

Meanwhile, findings on *political indoctrination* are less consistent. In Panel A, while its coefficient is positive in a pairwise regression (column 3), it becomes negative in the horse race, especially after controlling for online rating (column 4). In Panel B, political indoctrination has no significant effect on consumption of main melody movies.

In addition, using data on audience profile, we explore consumption patterns for different groups of audience. We find gender and age gaps in consumption of main melody movies. Similar gaps also exist in the appeal of political indoctrination, whereas the appeal of personality-driven

Table 2: Effect of Movie Attributes on Box Office

	(1)	(2)	(3)	(4)	(5)
<b>Panel A: All Movies</b>					
star power	0.199*** (0.014)		0.199*** (0.014)	0.254*** (0.021)	0.254*** (0.021)
director appeal	0.698*** (0.014)		0.698*** (0.014)	0.630*** (0.019)	0.630*** (0.019)
indoctrination		0.837*** (0.182)	-0.063 (0.083)	-0.276** (0.103)	-0.243 (0.159)
online rating				0.102*** (0.024)	0.103*** (0.024)
main melody					-0.070 (0.235)
Year F.E.	✓	✓	✓	✓	✓
Genre F.E.	✓	✓	✓	✓	✓
Observations	2608	3588	2608	1704	1704
Adj. R <sup>2</sup>	0.793	0.096	0.793	0.782	0.782
<b>Panel B: Main Melody Movies Only</b>					
star power	0.195*** (0.053)		0.198*** (0.054)	0.342*** (0.082)	0.342*** (0.082)
director appeal	0.670*** (0.048)		0.671*** (0.048)	0.581*** (0.072)	0.581*** (0.072)
indoctrination		0.386 (0.294)	-0.063 (0.116)	-0.122 (0.150)	-0.122 (0.150)
online rating				0.093 (0.133)	0.093 (0.133)
main melody					0 (.)
Year F.E.	✓	✓	✓	✓	✓
Genre F.E.	✓	✓	✓	✓	✓
Observations	172	186	172	99	99
Adj. R <sup>2</sup>	0.798	0.146	0.797	0.803	0.803

*Note:* All estimates are from OLS regressions of logged movie box office. Robust standard errors are reported in parentheses. *Star power* and *director appeal* of each movie are measured based on its actors' and director's cumulative box office between 2011 and the year when the movie was released. Estimation results using an alternative measure in total terms are reported in Table A2 in Appendix.

<sup>+</sup> $p < 0.1$ , \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

entertainment is universal across genders and age (See Figures A4 and A5 in Appendix).

Together, these findings point to the efficacy of personality-based entertainment to draw large audiences to main melody movies.

## 5.2 Experimental Evidence

### 5.2.1 Propaganda Movie Storytelling: Narrative vs. Indoctrination

To better determine the effect of political indoctrination on consumption of propaganda movies, it is important to simultaneously examine another aspect of movie storytelling, namely narrative-based entertainment. By decomposing movie synopses into these two dimensions, we can adjudicate whether viewers are drawn to propaganda movies for the political indoctrination or entertaining narratives.

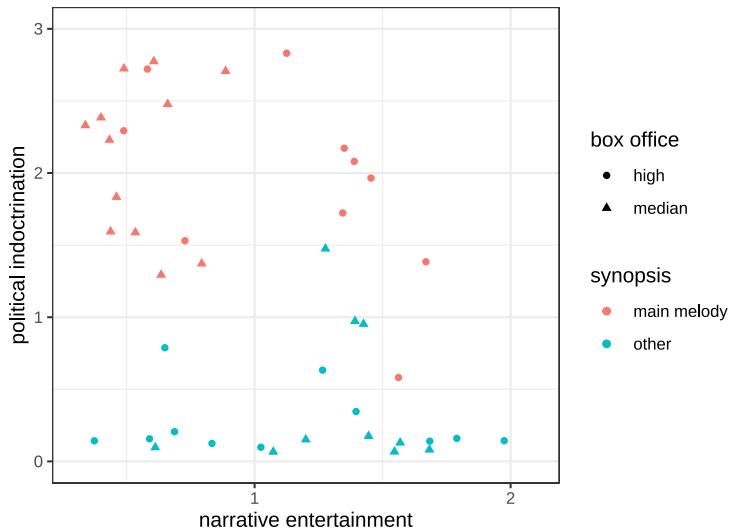
To do so, we turn to data from the survey experiment. First, we plot the 43 movie synopses in a two-dimensional space based on their average scores of *narrative-based entertainment* and *political indoctrination* from the WAT.

As shown in Figure 3, MM movies, colored in red, score significantly higher on political indoctrination. The mean value of **indoctrination** is 2.03 for MM movies and only 0.34 for non-MM movies. There is also a wider variation in political indoctrination among propaganda movies. In terms of narrative-based entertainment, difference between MM and non-MM movies is less stark: the mean of **narrative** is 0.83 for the former and 1.21 for the latter. While the majority of propaganda movies are located near zero for **narrative**, a decent number of them score quite high; this variation might potentially drive consumption.

Indeed, this is exactly what Figure 3 shows. Among MM movies, those with more success at the box office, marked by circles, tend to score higher on narrative, whereas those with middling box office, marked by triangles, score lower in general. This pattern suggests a discerning audience that makes different consumption choices when it comes to propaganda movies, based on how en-

tertaining the stories are. In contrast, there are no similar patterns for non-MM movies. Moreover, among MM movies, there exists a moderate negative correlation between indoctrination and narrative (Pearson correlation coefficient -0.360 with p-value 0.0999), indicating that MM movies with greater indoctrination tend to be low on narrative entertainment. The negative coefficient estimates on political indoctrination reported in [Table 2](#), therefore, may be driven by factors such as low narrative entertainment rather than high indoctrination.

Figure 3: Movie Storytelling: Narrative Entertainment vs. Political Indoctrination



*Note:* This plot shows all 43 movie synopses used in the survey experiment. Each synopsis is plotted based on its average score of *narrative entertainment* and *political indoctrination*, as evaluated by survey respondents. For a detailed plot with movie titles, see [Figure A9](#) in Appendix.

The distribution of propaganda movies on these two dimensions points to an important important fact about contemporary Chinese propaganda movies : not all of them adopt the same kind of storytelling. Rather, some are more over the top with indoctrination, whereas others are more entertaining in their narratives, and still a few others manage to be both at the same time.<sup>19</sup> This heterogeneity is crucial for understanding the propaganda landscape in China today, it also provides an opportunity for us to probe why some propaganda movies are better received by audience

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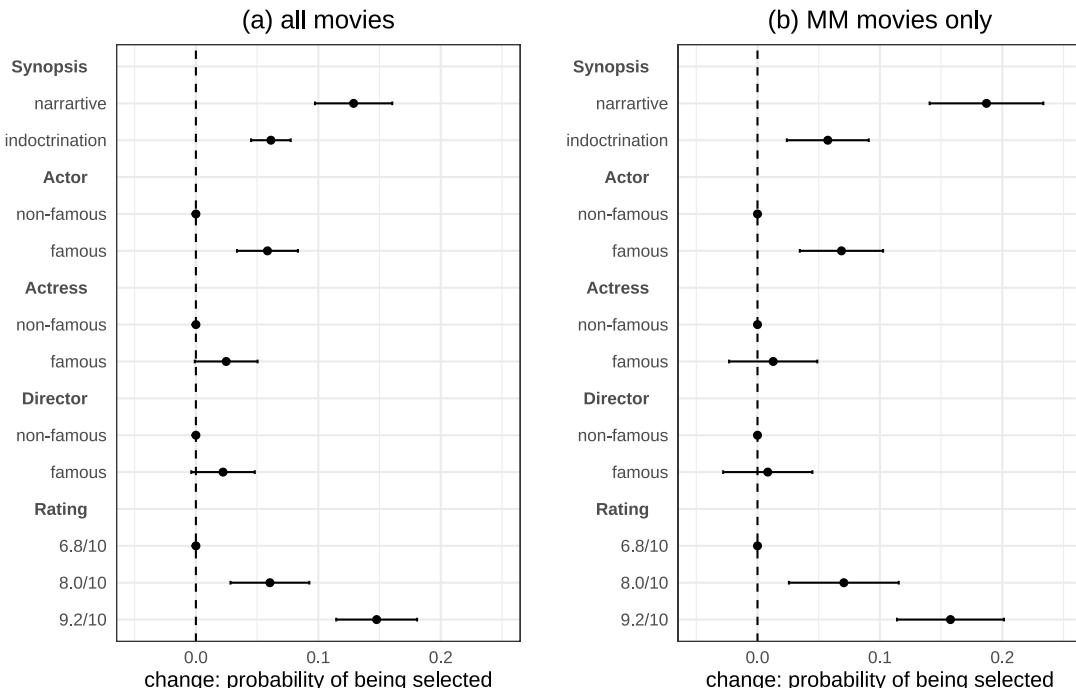
<sup>19</sup>a quick note on possible tradeoff

than others. With this goal in mind, we next look at consumption choice by audience in the conjoint experiment.

### 5.2.2 Effects of Entertainment Value and Political Indoctrination

Before estimating [Equation 2](#), we conduct a baseline regression, where movie synopsis is treated as a single attribute, as it appears in the conjoint design. We find that movies with a main melody synopsis outperform others ([Figure A10](#) in Appendix): respondents are more likely to see these movies and express greater interest them. Moreover, famous entertainers – especially famous actors – also increase likelihood of consumption. These results corroborate our earlier findings from the observational data and provide evidence in support of Hypothesis H1a on the effect of personality-based entertainment.

Figure 4: Effects of Narrative Entertainment and Political Indoctrination



*Note:* The figure reports the estimated AMCEs of various attribute values on a movie's probability of being selected, with the synopsis attribute decomposed into *narrative* and *indoctrination*. Estimates are based on an OLS model with standard errors clustered at the respondent level. Horizontal bars represent 95% confidence intervals; markers without horizontal bars denote the reference category in each attribute.

Next, we decompose movie synopsis into *narrative* and *indoctrination*. Using consumption choice as the primary outcome, we estimate [Equation 2](#), first with the full sample and then with main melody movies only. As reported in [Figure 4](#), results from both estimations are highly consistent. It shows that *narrative* has a large, positive effect. Its effect is even more prominent when it comes to choosing between propaganda movies (plot b); in fact, *narrative* has the largest effect of all attribute values: with each unit increase in a movie's narrative-based entertainment, respondents are 0.187 more likely to see it. Meanwhile, we also see a positive effect of *indoctrination* on audience's consumption choice. Rather than being annoyed and driven away, audience responds rather well to political indoctrination in movie storytelling.

One advantage of conjoint analysis is that it allows for direct comparison of effect magnitude among various attribute values. Our results show that *narrative* has a far greater effect than *indoctrination* on consumption: the AMCE of *narrative* is more than twice of that of *indoctrination* in the full sample (0.129 vs. 0.061 in plot a) and more than three times when restricting the sample to propaganda movies only (0.187 vs. 0.057 plot b). Furthermore, the effect of narrative-based entertainment also outweighs that of personality-based entertainment: the AMCE of *narrative* is greater than that of *actor*, *actress*, and *director* combined.

As robustness checks, we estimate the same model using the rating outcome; we also estimate an alternative model specification, where *narrative* and *indoctrination* are measured at the respondent level. The results are highly consistent (see Figures [A11](#) and [A12](#) in Appendix). All these findings clearly demonstrate that a primary factor contributing to consumption of propaganda movies is narrative-based entertainment. On average, people are more likely to see a propaganda movie when it tells an entertaining story with exciting plot twists. From the perspective of the regime, these findings highlight the importance of using engaging narratives to promote and disseminate propaganda.

The results also show that intense political indoctrination does not reduce respondents' propensity of consumption; instead, it has a moderate positive effect. This is contrary to conventional

wisdom that propagandist messaging in media hurts consumption. We find that audience does not necessarily have a negative reaction to political indoctrination when it is presented via a medium of entertainment such as movies.

### 5.2.3 Heterogeneous Effects

The key to increasing voluntary consumption of propaganda is to expand its reach to those who are generally disinclined to do so. In the heterogeneous effect analysis, therefore, we estimate [Equation 2](#) for different subgroups of respondents, classified based on (1) their general attitude toward propaganda movies and (2) self-reported interest in politics.<sup>20</sup> To focus on what makes propaganda movies popular with various groups, we restrict the sample to only main melody movies.

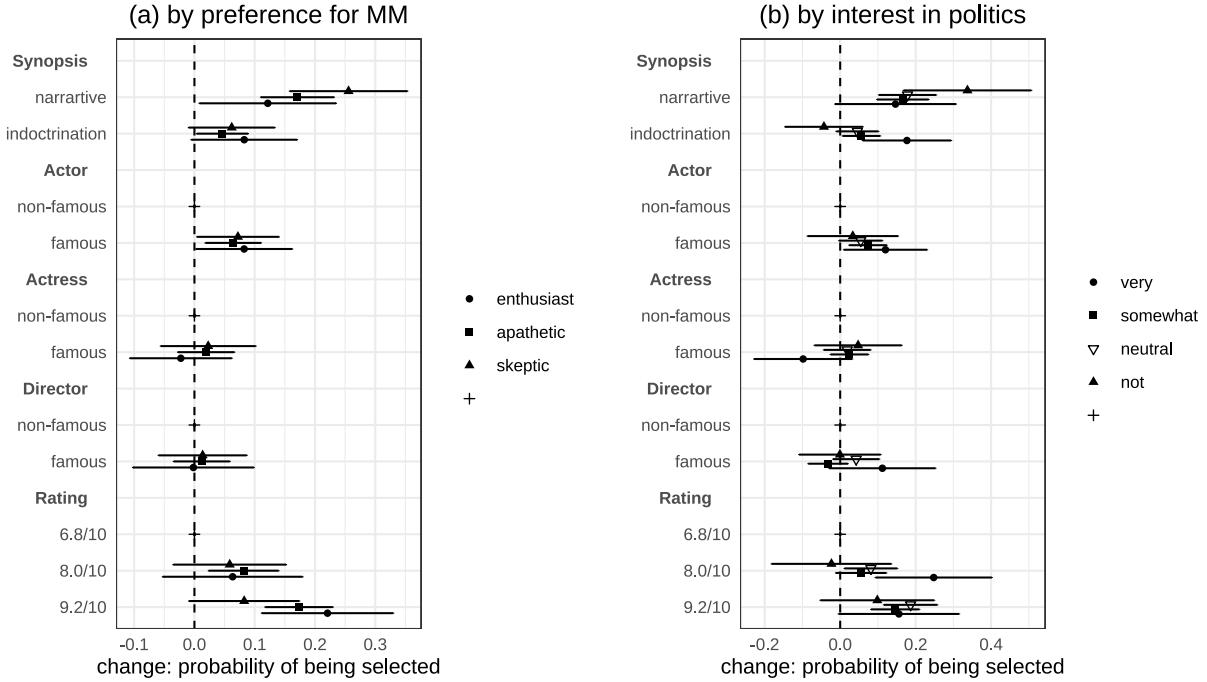
As reported in [Figure 5](#), respondents least interested in propaganda movies or in politics are the most responsive to narrative-based entertainment, while they remain unmoved by political indoctrination.

In plot (a), the estimate of *narrative* is the largest for the *skeptic* group at 0.256. In fact, for this group, with the exception of famous actor, no other attribute values have a statistically insignificant effect on their consumption choice. It suggests that, for viewers who dislike propaganda movies, the most effective way to attract them to these movies is by incorporating more entertaining storytelling. In comparison, those in the *apathetic* group are more malleable; their consumption can be influenced by entertaining narratives, as well as celebrity entertainers and good ratings. Even for *enthusiasts* of propaganda movies, good storytelling can further increase their consumption. Similarly, in plot (b), the estimate of *narrative* is the largest for those “not interested” in politics (0.337), which also has the largest effect magnitude among all attribute values across all four groups. In contrast, the estimate of *indoctrination* is negative for this group, albeit statistically

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<sup>20</sup>For the former, those who choose *main melody* as one of their preferred movie genres are classified “enthusiast”; those who choose *main melody* as one of their disliked movie genres are classified as “skeptic”; and those who choose *main melody* for neither are classified as *apathetic*. For the latter, we use survey question, “Generally speaking, are you interested in news on current political affairs?”

Figure 5: Heterogeneous Effects: Narrative Entertainment vs. Political Indoctrination



*Note:* The figure reports the estimated AMCEs of various attribute values on a movie's probability of being selected. Estimates are based on an OLS model applied to the subsample of main melody movie profiles; standard errors are clustered at the respondent level. Horizontal bars represent 95% confidence intervals; markers without horizontal bars denote the reference category in each attribute.

insignificant. Equally important, the two groups of respondents in the middle that make up the majority of respondents (i.e. “somewhat” and “neutral”) are hardly responsive to *indoctrination*, but they respond positively to *narrative* at 0.166 and 0.179, respectively.

Combined, these results illustrate the broad appeal of narrative-based entertainment in drawing viewers from all groups to see main melody movies. It is especially effective in appealing to those who are not inclined to consume propaganda. In contrast, the positive average effect of political indoctrination seen earlier (Figure 4) is mostly driven by viewers who are already predisposed to propaganda movies, i.e., enthusiasts for main melody movies or those who are very interested in politics. These findings point to the unique power of entertaining storytelling to disseminate propaganda, reaching segments of the population that usually pay little or no attention to political indoctrination.

The findings also show that, although the appeal of political indoctrination varies considerably across groups, it does not generate a sharp negative reaction from any group. This suggests that Chinese viewers are overall quite tolerant of political indoctrination when presented in movies. While we are unable to pinpoint the exact reason for this, one possible interpretation is that movie stories with heavy political indoctrination tend to be more positive in their emotional undertone, which is favored by audience.<sup>21</sup> This is in line with recent studies on the use of emotions by authoritarian regimes to build support (Greene and Robertson 2022).

We replicate the analysis with the full sample of all movies and obtain very similar results ([Figure A14](#) in Appendix). In addition, we also estimate the heterogeneous effects based on respondents' socioeconomic evaluation and their demographic characteristics ([Figures A15](#) and [A16](#) in Appendix). In the former, those who are less well-off (i.e., in poor economic situations or dissatisfied) do not respond positively to political indoctrination, but they are more likely to see a propaganda movie when it contains greater entertainment elements, especially *narrative*. In the latter, across all gender, age, and education subgroups, *narrative* has one of the largest effects among all attribute values; its effect is especially prominent for groups that tend to shy away from propaganda movies, such as female or younger viewers, according to earlier analysis of audience profile ([Figure A4](#) in Appendix).

## 6 Conclusion

Authoritarian regimes use a host of methods for propaganda, but each with its strengths and limitations ([Chen, Valdovinos Kaye and Zeng 2021](#)). Authoritarian governments can intervene in citizens' regular news consumption by distorting information. However, scholars emphasize that an excessive bias in news content diminishes both its credibility and its consumption. Education

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<sup>21</sup>In fact, when we decompose *synopsis* into all 14 keywords in the conjoint analysis, the only keyword with a significant negative effect is “social critique”, which is usually quite negative in terms of emotions. It suggests that audience generally prefers movies with positive emotions, which might explain their moderately positive response to political indoctrination.

can serve as a channel for propaganda to reach a younger audience, but its effectiveness might be hindered by the absence of voluntary choices, possibly resulting in an unenthusiastic audience. Popular entertainment comes with its own set of advantages and disadvantages. Blockbuster films, characterized by their sporadic nature, deviate from the routine consumption patterns associated with daily news and education. However, due to their spectacle-like nature, they wield the capability to impact vast audiences. This influence is not limited to merely reaching people, such as exposing them to propaganda, but also extends to enticing them to willingly partake. This voluntary engagement potentially has a greater propensity to lower people's guard compared to forced exposure.

In this study, we investigate patterns of voluntary consumption of propaganda in contemporary China, focusing on its propaganda movies, to understand the contributing factors to popular propaganda. Leveraging observational and experimental evidence, we find that the entertainment value of propaganda plays a key role in inducing consumption. Moreover, there are strategies that an authoritarian regime can adopt to make its propaganda narrative more entertaining, such as incorporating celebrities and enhancing storytelling quality. Among these strategies, we discover that narrative-driven entertainment garners the broadest appeal. By incorporating greater entertainment elements, a propaganda movie can attract more viewers, especially those who are unlikely to consume propaganda.

Although we do not directly investigate the effectiveness of these movies at shaping audience's political attitudes, we find that people do not shy away from propaganda movies because they detect political indoctrination in storylines. This indicated that the consumption of propaganda through entertainment is different from our traditional understanding of the consumption of propaganda. The credibility of propagandist information sources might matter for audience seeking truth. But for film, often called the "dream factory," the audience might have a different objective in mind, as the audience can often indulge in narratives they know are not rooted in reality.

Combined, these findings highlight the importance of entertainment as a vehicle for propa-

ganda. It serves as a Trojan horse that reaches otherwise impenetrable segments of the population and opens them up for indoctrination. In the Chinese case, other studies show that, in addition to movies, the regime also resorts to other entertainment and social media platforms in an effort to disseminate propaganda ([Chen, Valdovinos Kaye and Zeng 2021](#)).

High consumption of propaganda not only creates a precondition for persuasion, it also fosters an impression that the ideology promoted in propaganda is widely shared by citizens, thus lending the regime a veneer of legitimacy. This is also, why spectacles like blockbuster films, often scheduled around key political anniversaries, are an important tool for authoritarian propaganda. By extension, our findings caution against the analytical impulse to interpret voluntary consumption of propaganda as an indicator of approval or support for the regime, as there exists many non-political or non-ideological reasons for average citizens to consume propaganda.

One caveat of this study is that, while we argue that propaganda is multidimensional, we treat its political indoctrination as one dimension without further differentiation. In reality, political indoctrination can take on different themes and audience may respond to them differently (e.g., love of country vs. praise of leaders), which in turn could impact consumption. Future research is needed to delve deeper into the nuances of political indoctrination.

In addition, even though our study builds on the research on the consumption of alternative propaganda sources, our study does not actually test the consumption of entertainment alongside the consumption of these alternative propaganda sources. Further research in this area could provide deeper insights into understanding the different propaganda tools.

Furthermore, this study does not why the regime would want to resort to the use of popular entertainment. Future research is necessary to comprehensively investigate the regime's objectives regarding the intensity of propaganda or the utilization of distinct strategies for propagandistic purposes.

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Entertainment as Trojan Horse:  
Voluntary Consumption Propaganda in China

Appendix

## A Observational Analysis

Table A1: Domestic Movies Released in 2011-2021: Summary Statistics

	N	Mean	S.D.	Min	Max
<b>full sample: all movies</b>					
main melody	3,956	0.050	0.217	0	1
political indoctrination	3,956	0.056	0.278	0	3
box office (in million yuan)	3,588	73.11	326.36	0.001	5,758.93
star power (cumulative)	2,800	683.48	1,580.38	0	19,726.97
star power (total)	2,800	1,437.85	2,526.38	0	19,726.97
director appeal (cumulative)	2,850	277.75	1,175.03	0	11,979.99
director appeal (total)	2,850	321.41	1,329.55	0	11,979.99
online rating	1,757	4.90	1.58	2.10	9.00
audience profile: male	658	0.378	0.111	0.127	0.788
audience profile: under 30	658	0.548	0.166	0.082	0.855
audience profile: college	658	0.920	0.040	0.688	0.978
<b>main melody movies</b>					
political indoctrination	196	0.796	0.790	0	3
box office (in million yuan)	186	219.27	775.07	0.002	5,758.93
star power (cumulative)	180	1,074.35	2,832.29	0.012	16,620.43
star power (total)	180	1,910.46	3,760.72	0.021	17,993.22
director appeal (cumulative)	181	577.82	1,837.81	0	11,084.65
director appeal (total)	181	741.05	2,289.88	0	11,585.57
online rating	100	5.73	1.52	2.40	8.90
audience profile: male	31	0.509	0.094	0.290	0.677
audience profile: under 30	31	0.501	0.123	0.308	0.712
audience profile: college	31	0.904	0.034	0.833	0.970
<b>other domestic movies</b>					
political indoctrination	3,760	0.018	0.138	0	2
box office (in million yuan)	3,402	65.12	280.04	0.001	5,413.30
star power (cumulative)	2,620	656.62	1,452.50	0	19,726.97
star power (total)	2,620	1,405.38	2,416.20	0	19,726.97
director appeal (cumulative)	2,669	257.40	1,113.54	0	11,979.99
director appeal (total)	2,669	292.95	1,233.33	0	11,979.99
online rating	1,657	4.85	1.572	2.10	9.00
audience profile: male	627	0.371	0.108	0.127	0.788
audience profile: under 30	627	0.550	0.168	0.082	0.855
audience profile: college	627	0.921	0.040	0.688	0.978

Table A2: Effect of Movie Attributes on Box Office (Alternative Measures)

	(1)	(2)	(3)	(4)	(5)
<b>Panel A: All Movies</b>					
star power (total)	0.154*** (0.013)		0.154*** (0.013)	0.192*** (0.019)	0.192*** (0.019)
director appeal (total)	0.728*** (0.013)		0.729*** (0.013)	0.670*** (0.016)	0.670*** (0.016)
indoctrination		0.837*** (0.182)	-0.110 (0.083)	-0.338** (0.105)	-0.265 (0.159)
online rating				0.094*** (0.025)	0.095*** (0.025)
main melody					-0.153 (0.237)
Year F.E.	✓	✓	✓	✓	✓
Genre F.E.	✓	✓	✓	✓	✓
Observations	2608	3588	2608	1704	1704
Adj. R <sup>2</sup>	0.790	0.096	0.790	0.779	0.779
<b>Panel B: Main Melody Movies Only</b>					
star power (total)	0.172*** (0.049)		0.177*** (0.050)	0.239** (0.083)	0.239** (0.083)
director appeal (total)	0.678*** (0.045)		0.678*** (0.045)	0.632*** (0.068)	0.632*** (0.068)
indoctrination		0.386 (0.294)	-0.106 (0.115)	-0.196 (0.145)	-0.196 (0.145)
online rating				0.105 (0.135)	0.105 (0.135)
main melody					0 (.)
Year F.E.	✓	✓	✓	✓	✓
Genre F.E.	✓	✓	✓	✓	✓
Observations	172	186	172	99	99
Adj. R <sup>2</sup>	0.805	0.146	0.805	0.791	0.791

*Note:* All estimates are from OLS regressions of logged movie box office. Robust standard errors are reported in parentheses. The *star power* and *director appeal* of each movie are measured based on its actors' and director's total box office in the period between 2011 and 2021.

<sup>+</sup> $p < 0.1$ , <sup>\*</sup> $p < 0.05$ , <sup>\*\*</sup> $p < 0.01$ , <sup>\*\*\*</sup> $p < 0.001$

Figure A1: Market Share of Movies by Type

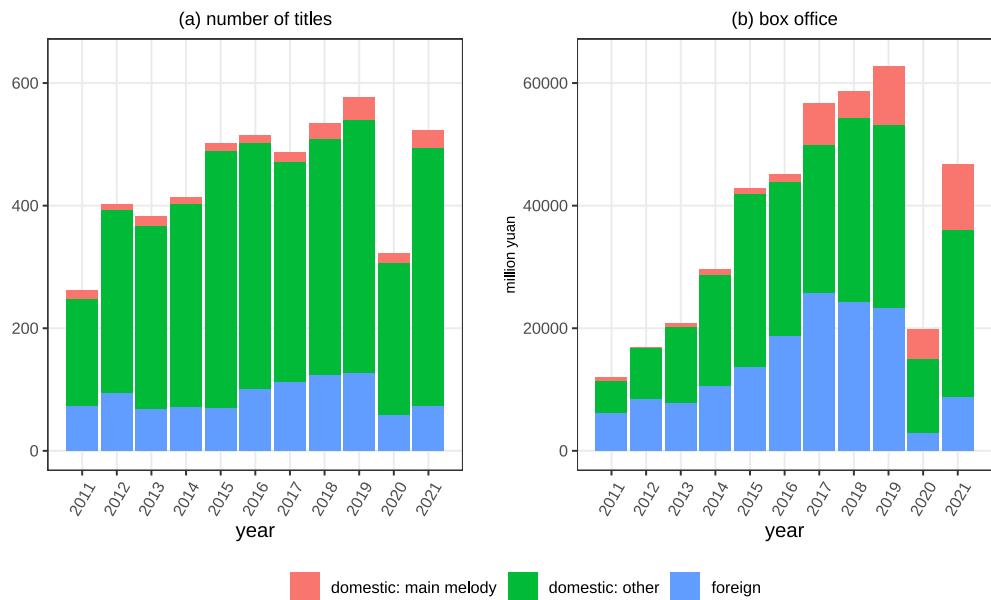


Figure A2: Distribution of Box Office: Natural vs. Logged

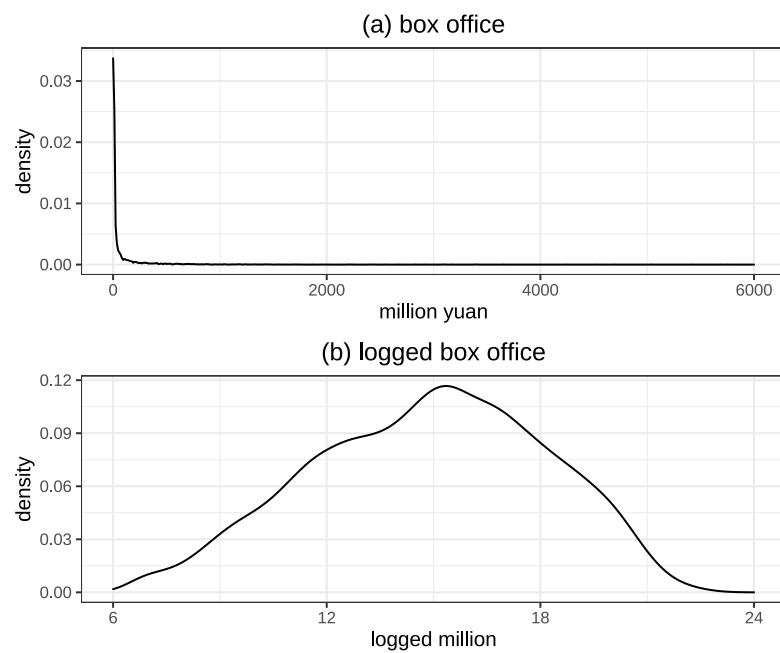
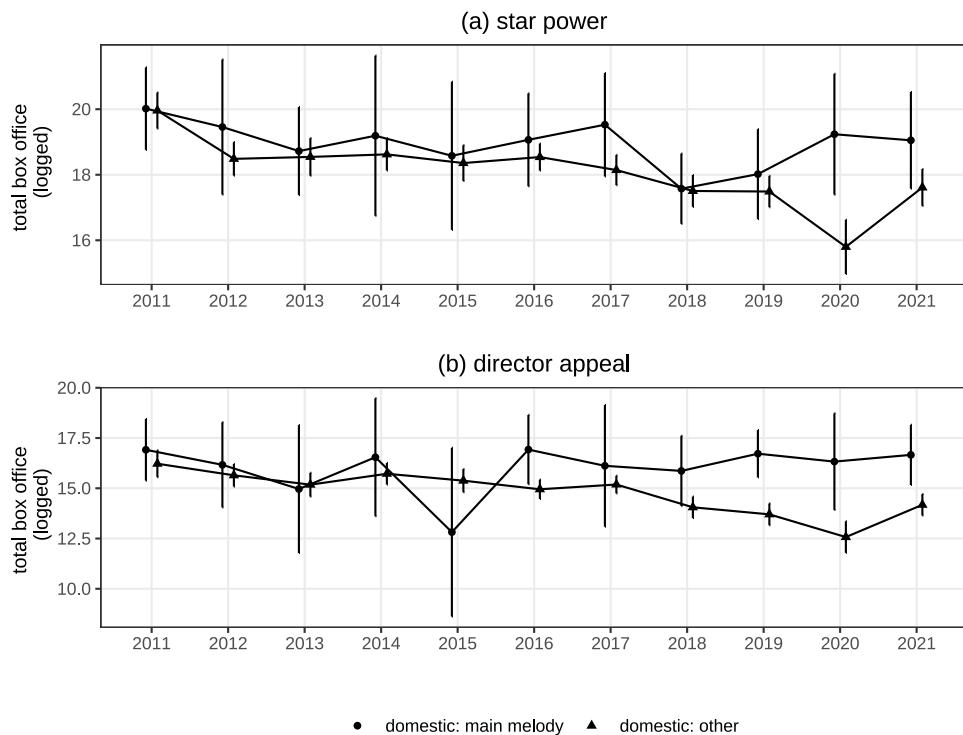
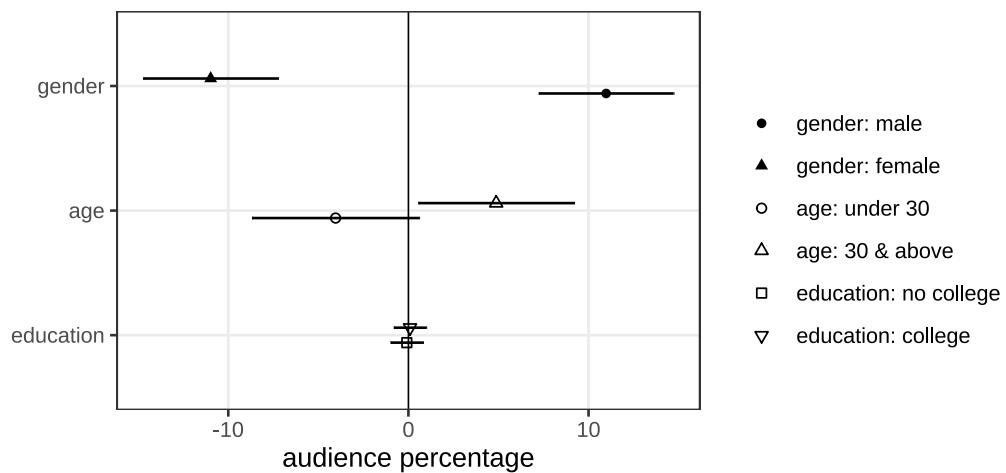


Figure A3: Personality-Based Entertainment by Type (Alternative Measure)



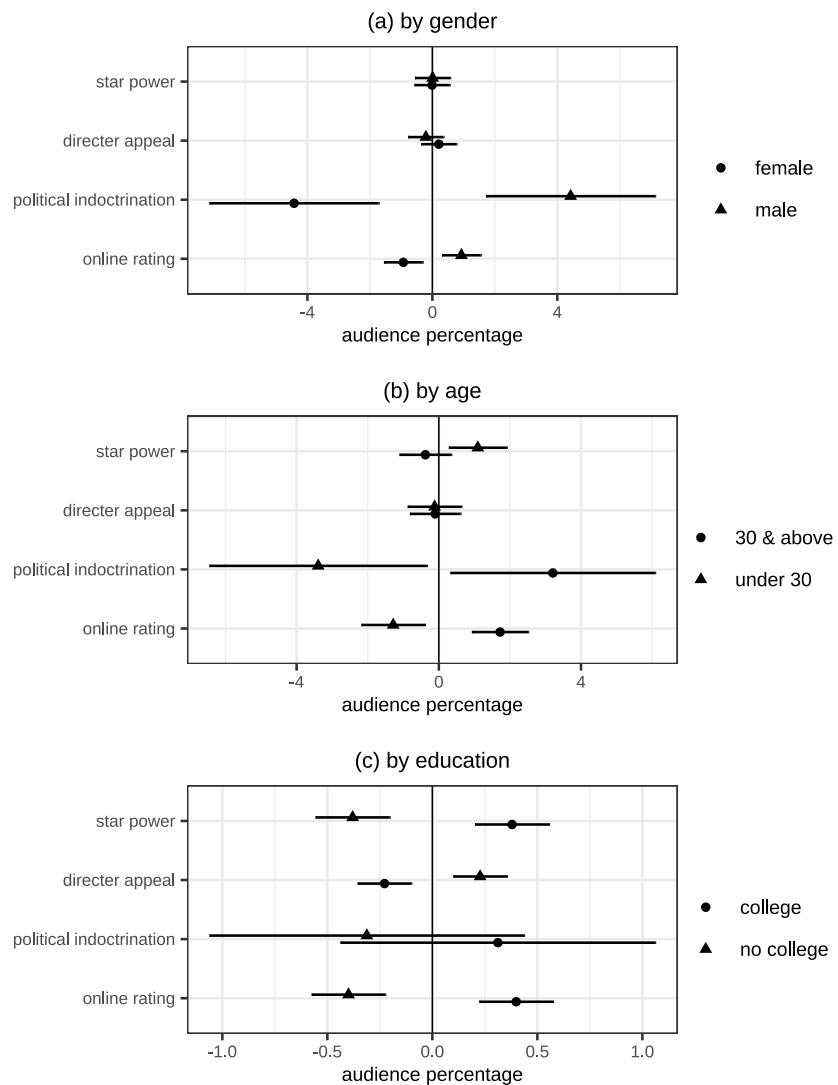
Note: These plots report the yearly mean of *star power* and *director appeal* for propaganda and non-propaganda movies, respectively. The *star power* and *director appeal* for each movie are calculated based on its actors' and director's total box office over the period between 2011 and 2021.

Figure A4: Consumption of Main Melody Movies by Different Groups



*Note:* Each plot reports the coefficient estimate of an OLS regression, where the outcome is audience percentage of a demographic group and the predictor is *main melody movie*; all regressions control for year and genre fixed effects, with robust standard errors. It should be noted that the sample consists of only 658 movies (of which 31 are main melody movies); results should be interpreted with caution.

Figure A5: Heterogeneous Effects of Movie Attributes



*Note:* These plots report coefficient estimates of *star power*, *director appeal* and *political indoctrination*, and *online rating* on audience percentage, as broken down by gender, age, and education. All estimates are based on OLS regressions that control for year and genre fixed effects, with robust standard errors. It should be noted that the sample consists of only 658 movies (of which 31 are main melody movies); results should be interpreted with caution.

## B Survey Experiment

Table A3: Survey Respondent Summary Statistics

	N	Mean	S.D.	Min	Max
male	598	0.498	0.500	0	1
age	598	31.27	10.86	18	65
college	598	0.452	0.498	0	1
student	598	0.276	0.447	0	1
working	598	0.634	0.482	0	1
CCP member	598	0.132	0.339	0	1
city size	577	2.652	1.018	1	4
experience of organized viewing	598	0.368	0.483	0	1
preference for MM movies	598	-0.074	0.635	-1	1
interest in politics	598	3.552	0.791	1	5
economic evaluation	598	2.980	0.763	1	5
social evaluation	598	2.749	0.653	1	4

Table for Attribute Balance

Figure A6: Survey Design: Components and Flow

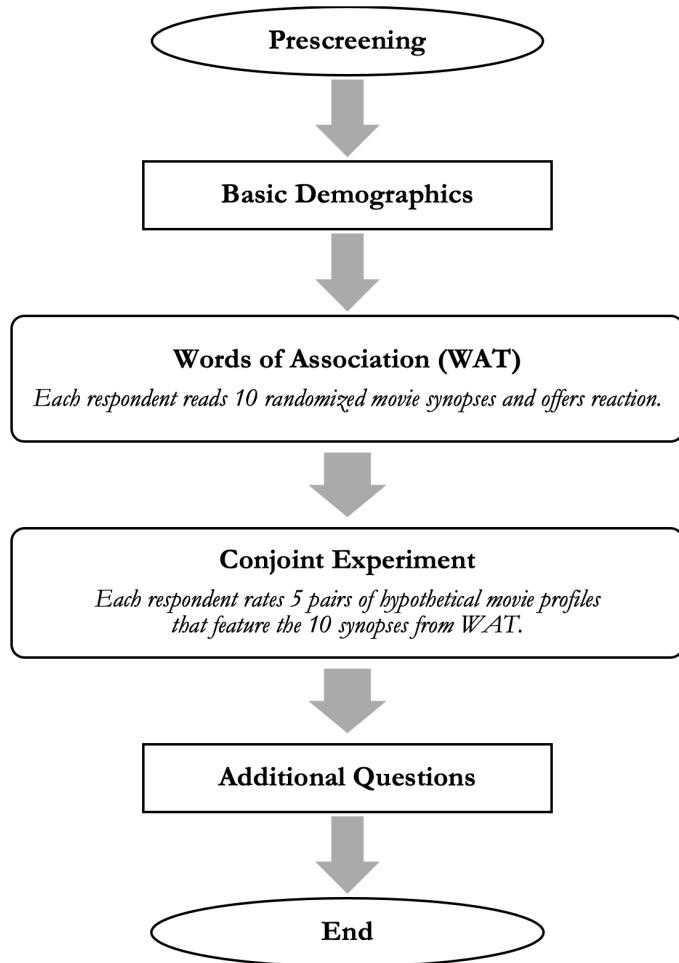


Figure A7: Word of Association Test: An Example

**剧情简介一**

20世纪80年代，三个怀有热情和梦想的年轻人在高等学府燕京大学的校园内相遇。尽管来自不同家庭环境、对人生有不同的愿景和规划，在风雨变幻的大时代下，他们展开了长达三十年的友谊和梦想征途，从学生年代相遇、相识，从出国到回国，一起艰苦创业，最终实现了“中国式梦想”。

以下哪几个词汇/标签最符合您对这部电影剧情的印象？

(请认真阅读剧情，并选择所有适用的选项。如果没有适用的选项，则选“都不适用”。)

剧情精彩	轻松愉快	正能量
引人入胜	玄幻飘逸	红色电影
惊险刺激	主旋律	爱国情怀
天马行空	温情	针砭时弊
浪漫唯美	激人奋进	都不适用

Table A4: Words Association Test: Design

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**A. Prompt**

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*Which of the following keyword(s) most closely describe your impression of the movie?  
(Please read the movie synopsis carefully and choose all options that apply. If none applies, choose “none.” )*

---

**B. List of Keywords**

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narrative entertainment	political indoctrination indoctrination	placebo
riveting plots (剧情精彩)	main melody (主旋律)	light-hearted (轻松愉快)
engrossing (引人入胜)	positive energy (正能量)	romantic (浪漫唯美)
thrilling (惊险刺激)	love of country (爱国情怀)	imaginative (天马行空)
	red movie (红色电影)	motivational (激人奋进)
		heart-warming (温情)
		fantastical (玄幻飘逸)
		social critique (针砭时弊)

---

Figure A8: Conjoint Experiment: An Example

	影片 1	影片 2
剧情简介	某非洲国家发生政变，武装冲突升级。刚刚在索马里执行完解救人质任务的中国海军“蛟龙突击队”，受命前往执行撤侨任务，谁知恐怖组织扎卡却将撤侨部队逼入交火区，一场激烈的战斗在所难免。与此同时，一名华裔调查新闻记者也遭到恐怖组织的劫持。为解救该人质，八名蛟龙队员潜入150名恐怖分子的聚集点，用自己的信念和鲜血铸成中国军人顽强不屈的丰碑！	传说中白鹿庄的原上，世代居住着同根家族白、鹿两姓子孙。时代变迁，清朝覆灭，民国建立。在大时代下成长起来的少爷们和长工伙计情同手足，成年后各赴前程。在古老的家族传统和革命浪潮之中，他们不断做出抉择、也不断被命运所左右。风云变幻的时局下，素有仁义之名的白鹿村内纷争不断，古老的土地面临着翻天覆地的变化。
男主角	黄渤	孙鹏昊
女主角	白百何	苇青
导演	林超贤	徐峥
豆瓣评分	8.0/10	8.0/10

综合以上所有信息，如果在这两部电影里挑一部观看，您更倾向于选择：



综合以上所有信息，您对这两部电影是否感兴趣？

请分别为它们打分：1代表完全没兴趣、不想看；5代表非常有兴趣、很想看。

1                    2                    3                    4                    5

影片1

影片2

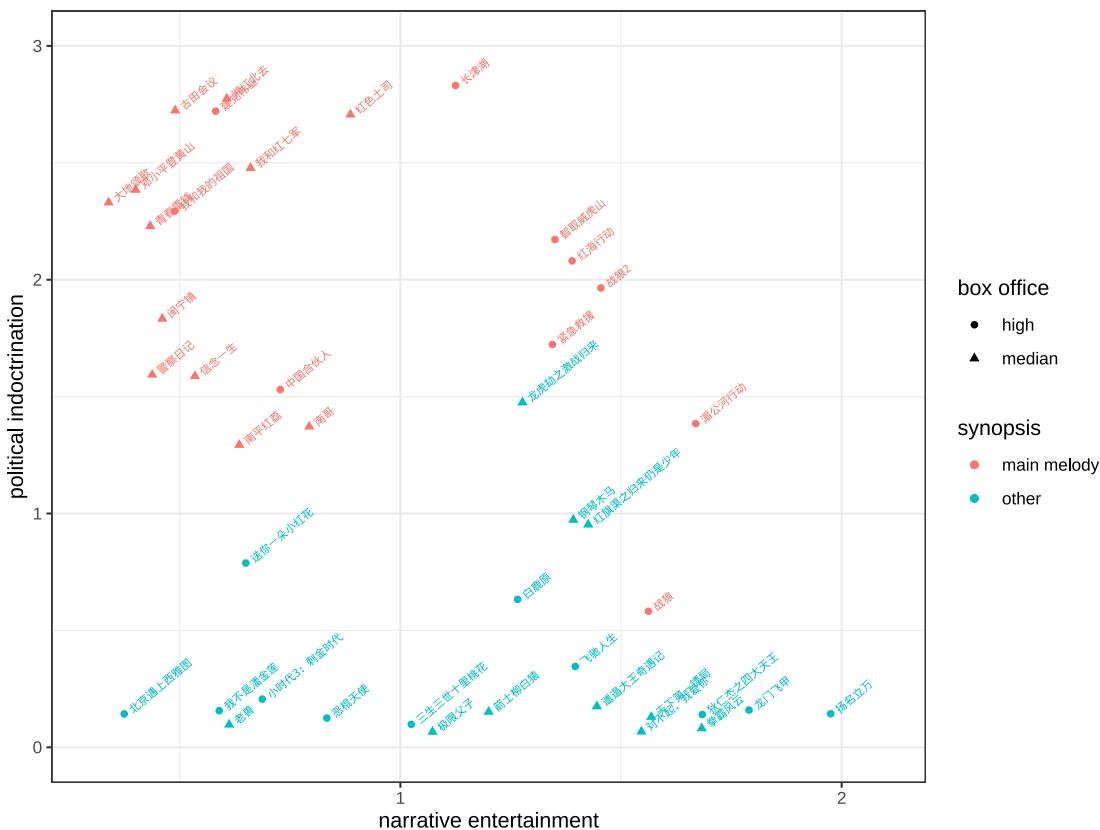
Table A5: Conjoint Experiment: Design

<b>A. Movie Profile</b>	
Attribute	Values
synopsis	- propaganda (5 high-performing; 5 median-performing) - non-propaganda (5 high-performing; 5 median-performing)
lead actor	- famous (10 names) - non-famous (10 names)
lead actress	- famous (10 names) - non-famous (10 names)
director	- famous (10 names) - non-famous (10 names)
online rating	- 6.8/10 - 8.0/10 - 9.2/10

**B. Questions**

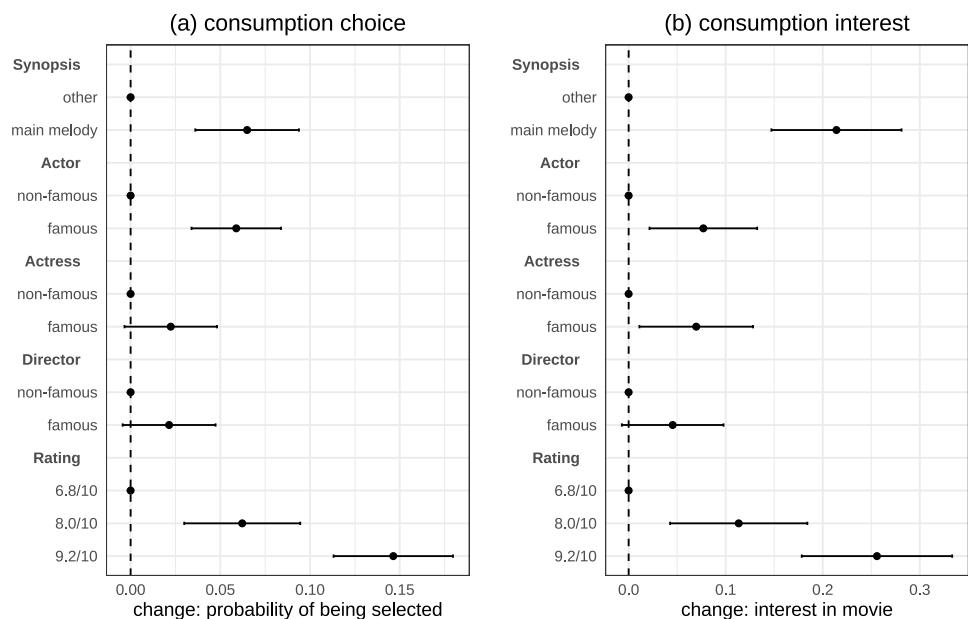
- 
1. *Based on the information, which of the two movies would you choose to see?*
  2. *Based on the information, how interested are you in seeing each movie?*
-

Figure A9: Decomposing Movie Storytelling (with Chinese Titles)



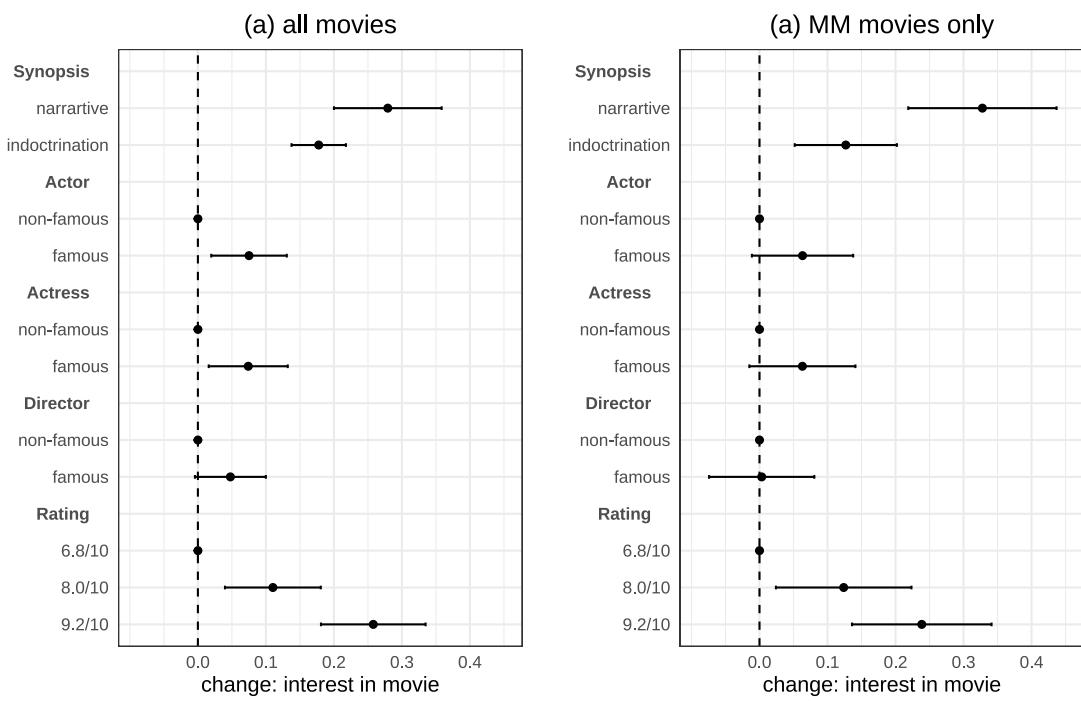
*Note:* This plot shows all 43 movie synopses used in the survey experiment and the movie titles in Chinese. Each synopsis is plotted based on its average score of *narrative entertainment* and *political indoctrination*, as evaluated by survey respondents.

Figure A10: Conjoint Analysis: Baseline Results



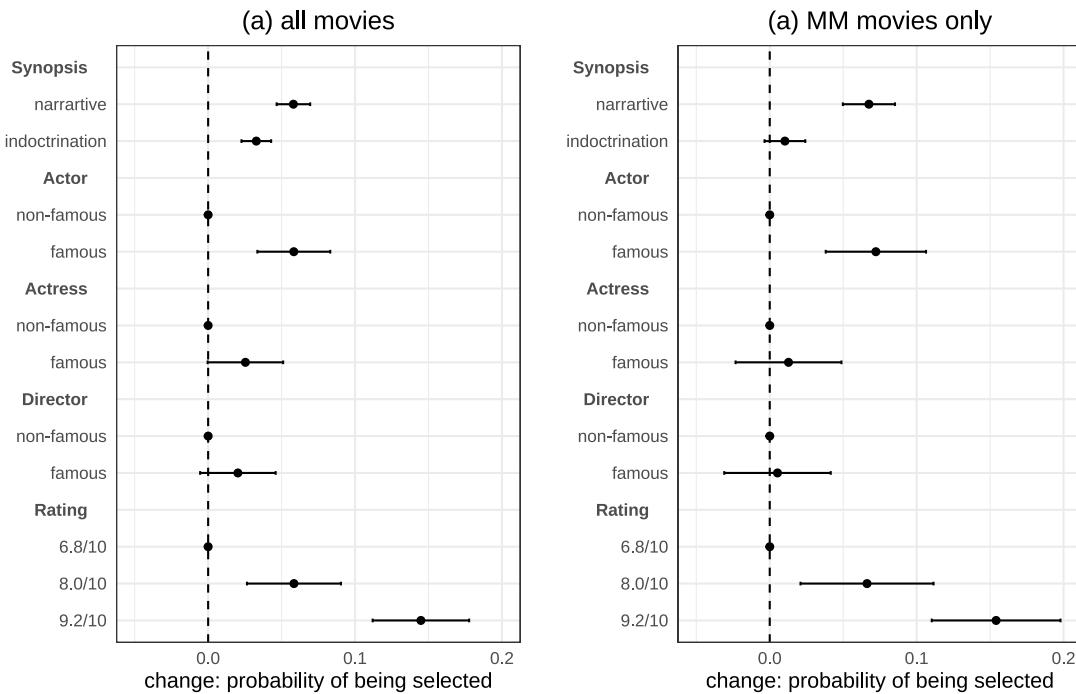
*Note:* The figure reports the estimated AMCEs of various attribute values on a movie's probability of being selected (plot a) or audience interest in it (plot b). Estimates are based on an OLS model with standard errors clustered at the respondent level. Horizontal bars represent 95% confidence intervals; markers without horizontal bars denote the reference category in each attribute.

Figure A11: Conjoint Analysis: Narrative Entertainment vs. Political Indoctrination  
(Alternative Outcome)



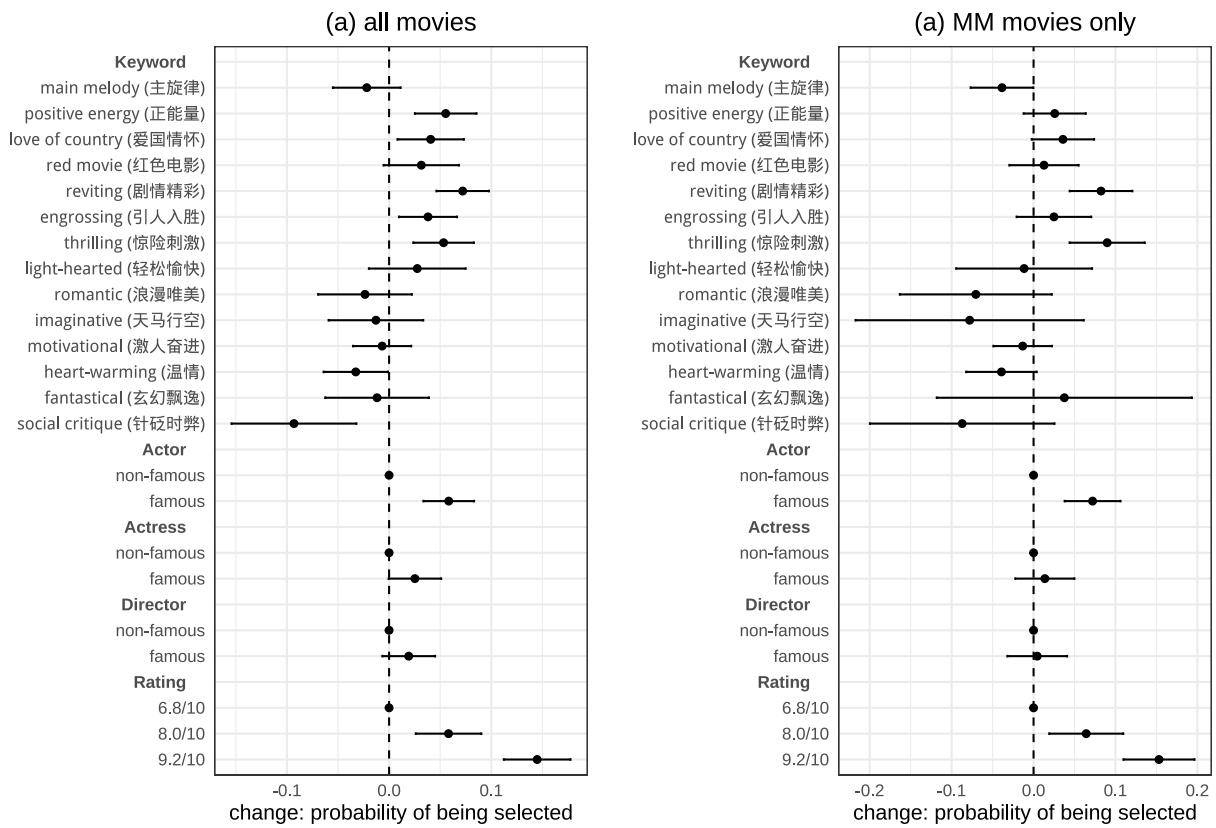
*Note:* The figure reports the estimated AMCEs of various attribute values on audience interest in a movie, with the synopsis attribute decomposed into *narrative* and *indoctrination*. Estimates are based on an OLS model with standard errors clustered at the respondent level. Horizontal bars represent 95% confidence intervals; markers without horizontal bars denote the reference category in each attribute.

Figure A12: Conjoint Analysis: Narrative Entertainment vs. Political Indoctrination  
(Alternative Measures)



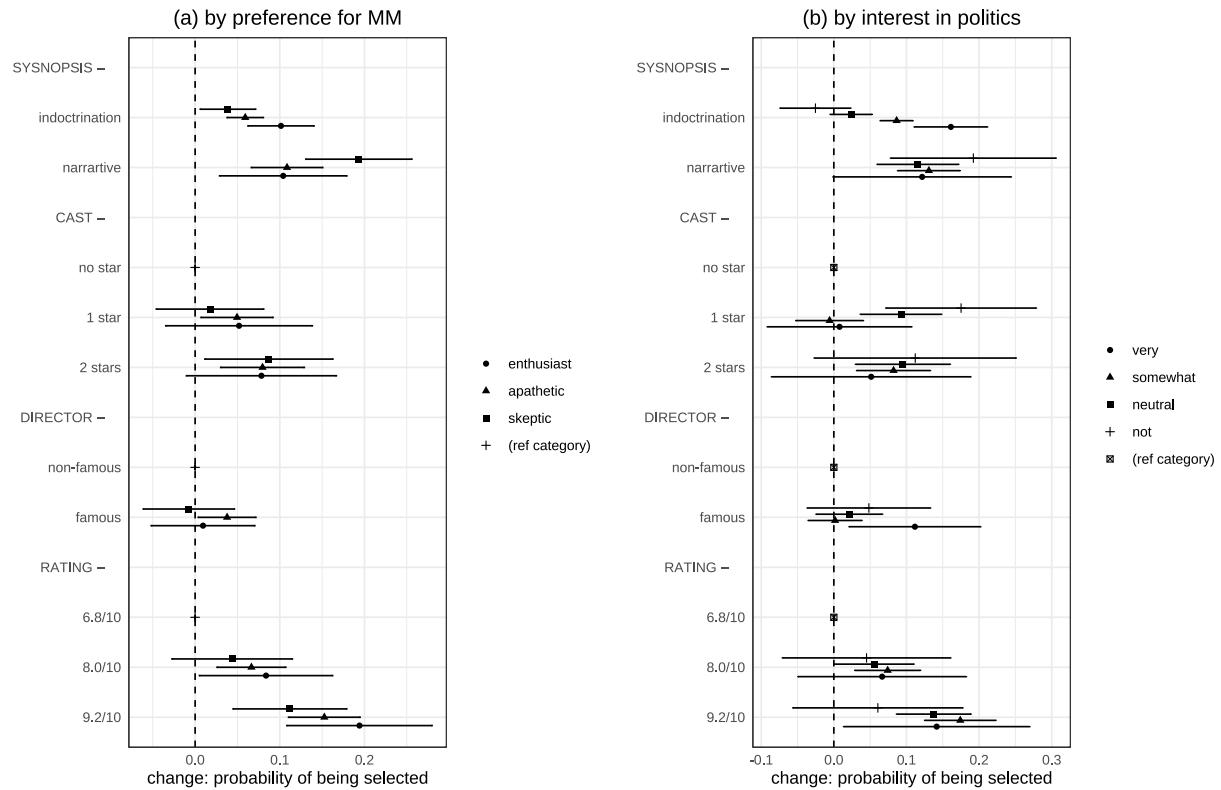
*Note:* The figure reports the estimated AMCEs of various attribute values on a movie's probability of being selected. *Narrative* and *indoctrination* are measured at the respondent level, directly using respondent input in the words of association test. Estimates are based on an OLS model with standard errors clustered at the respondent level. Horizontal bars represent 95% confidence intervals; markers without horizontal bars denote the reference category in each attribute.

Figure A13: Conjoint Analysis: Keywords



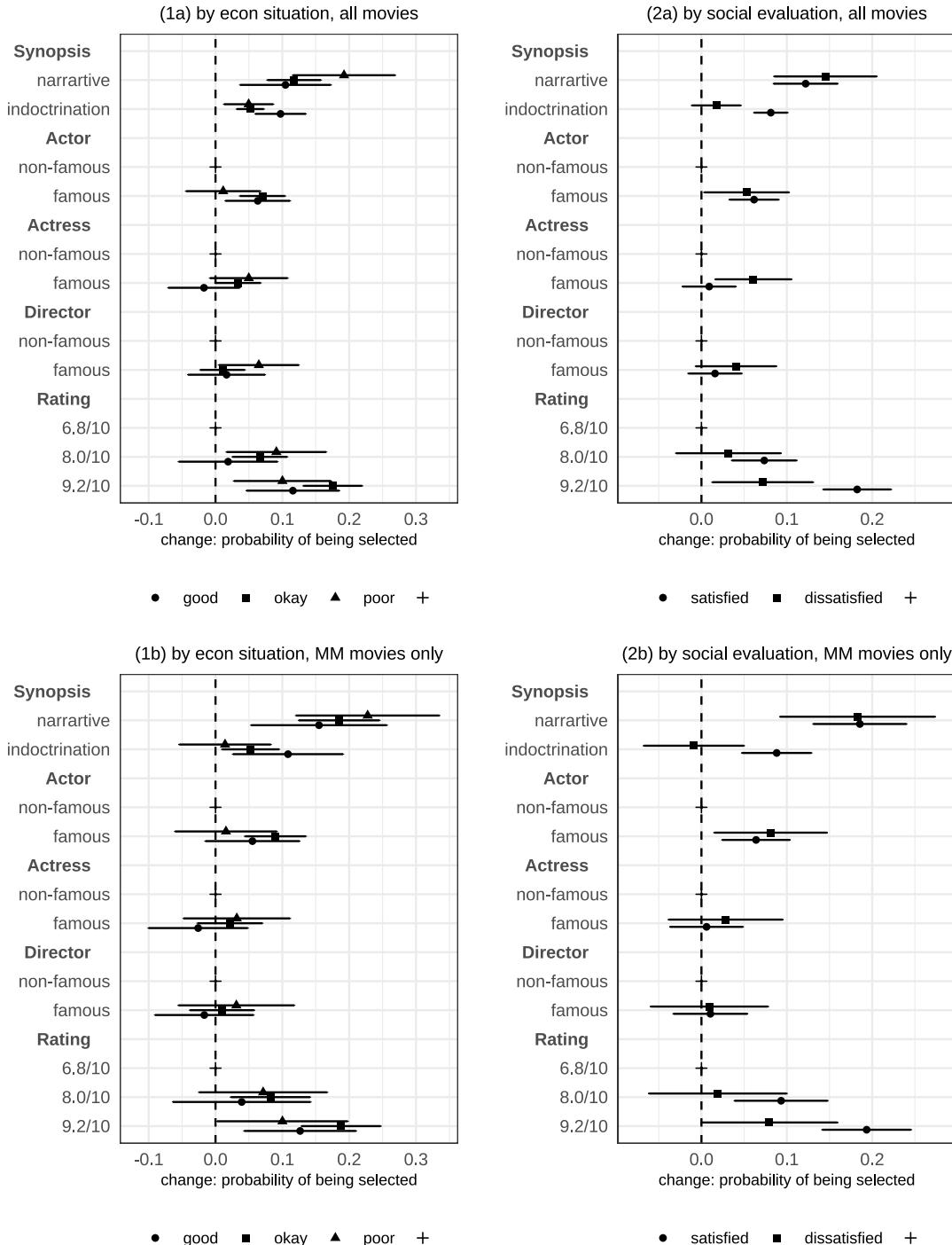
*Note:* The figure reports the estimated AMCEs of various attribute values, including the keywords chosen by respondents in association with a synopsis, on a movie's probability of being selected. Estimates are based on an OLS model with standard errors clustered at the respondent level. Horizontal bars represent 95% confidence intervals; markers without horizontal bars denote the reference category in each attribute.

Figure A14: Heterogeneous Effects: Narrative Entertainment vs. Political Indoctrination  
(All Movies)



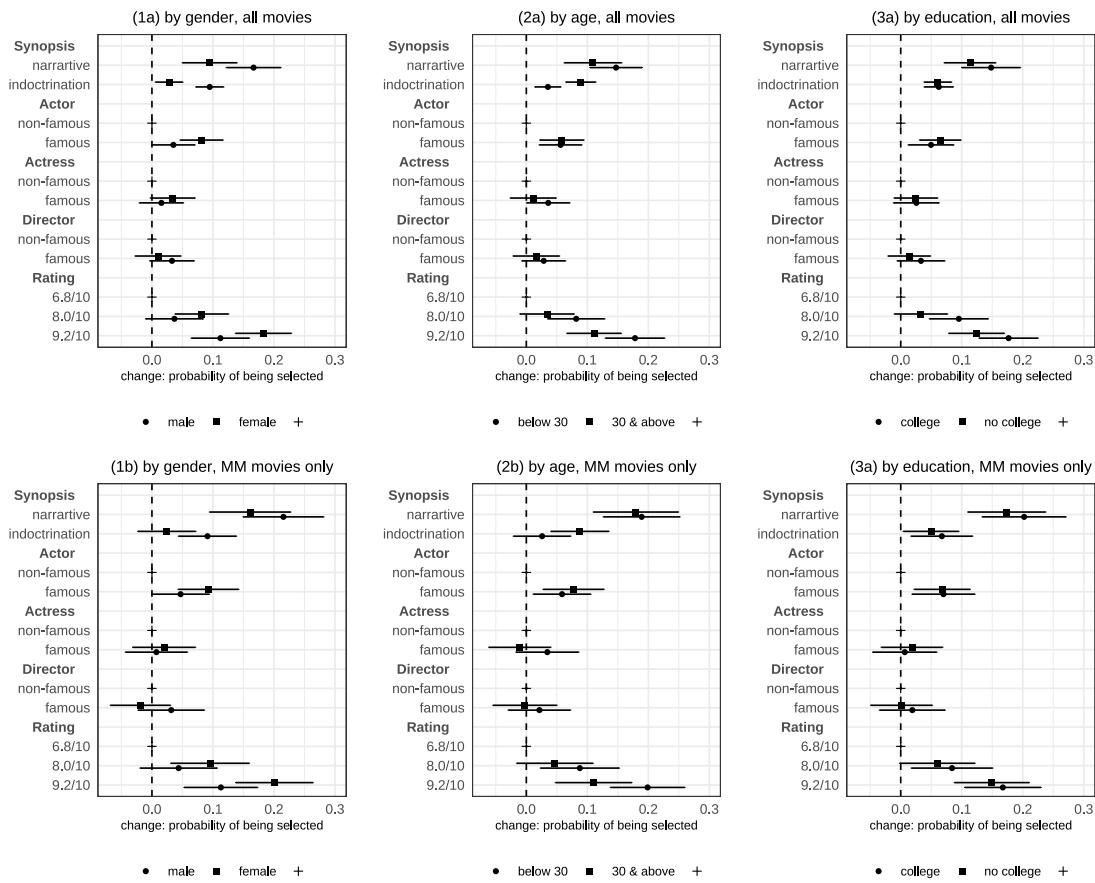
*Note:* The figure reports the estimated AMCEs of various attribute values on a movie's probability of being selected by different groups of respondents, classified by their preference for **propaganda movies** (plot a) and by their interest in politics (plot b). Estimates are based on an OLS model applied with the full sample of all movies; standard errors are clustered at the respondent level. Horizontal bars represent 95% confidence intervals; markers without horizontal bars denote the reference category in each attribute.

Figure A15: Heterogeneous Effects: Narrative Entertainment vs. Political Indoctrination  
(by Socioeconomic Evaluation)



*Note:* The figure reports the estimated AMCEs of various attribute values on a movie's probability of being selected by different groups of respondents, classified by evaluation of their own economic situation (plot a) and by their evaluation of the Chinese society overall (plot b). Estimates are based on an OLS model with standard errors clustered at the respondent level. Horizontal bars represent 95% confidence intervals; markers without horizontal bars denote the reference category in each attribute.

Figure A16: Indoctrination vs. Narrative Entertainment: Subgroup Analysis



*Note:* The figure reports the estimated AMCEs of various attribute values on a movie's probability of being selected by various demographic characteristics. Estimates are based on an OLS model with standard errors clustered at the respondent level. Horizontal bars represent 95% confidence intervals; markers without horizontal bars denote the reference category in each attribute.