**Abstract**

Today, nearly 67% of Americans play video games (Entertainment Software Association,2021). While scholars have explored the political and civic impact of playing video games, no research has examined how political ideology might influence players’ in-game behaviors. The study extends the motivated selection behaviors that received considerable attention to the context of video games. Specifically, we argue that selective play may occur when political elements or partisan cues in a video game are in line with or are opposite to players’ preexisting ideologies or values. Combining unobtrusive behavioral log data in *World of Tanks* (*WoT*) and self-reported survey data, we found that political ideology indeed has an impact on how players select vehicles of different nations via longitudinal multilevel modeling. We also explored the effects of such selection on gaming time, battle count, and win rate. Implications of further investigation of political use and effects of playing video games and to game companies are discussed.

Keywords: political ideology, selective play, MMO, multilevel modelling

**Towards Selective Play: The Role of Political Ideology and Military Identity in Playing a Massively Multiplayer Online Game**

Today, nearly 67% of Americans play video games (Entertainment Software Association, 2021). Among the plentiful game genres, there are in-game elements such as simulations of civic or political activities and helping others, known as civic gaming experiences. Such experiences were found to be related to increased political interest and political participation especially among teenagers (Lenhart et al., 2008). People seek socializing opportunities, finding and giving support, and self-disclosure in video games (Yee, 2006). Yet, previous literature focuses on the relationship between playing massively multiplayer online games (MMOs) on civic participation (Ferguson & Garza, 2011; Molyneux et al., 2015; Williams et al., 2008) from the perspective of redistribution of time for media exposure. No research has examined how political ideology might influence players’ in-game behaviors.

It is known that political ideology would shape one’s attitudes about different countries and foreign policies from public opinion polls and political science literature (Jin et al., 2021; Mutz, 2018; M. Smith, 2020; Tsygankov, 2017). Many video games feature combats in a war setting that mirrors historical backgrounds or real international conflicts. In such games, do we expect to see preferences on certain countries in real-life would translate into preferences over virtual national cues in a video game? If such preferences are driven by political ideology or military identity, would these factors influence how players behave in games? These questions are important not only because the answers offer insights to game companies on how to balance different in-game elements that could potentially attract players on different positions of a left-right political spectrum, but also lay a foundation for researchers to probe pressing issues such as political polarization in a video game setting.

The study extends the motivated selection behaviors that received considerable attention to the context of the video game. Specifically, we argue that selective play may occur when political elements or partisan cues in a video game are in line with or are opposite to players’ preexisting ideologies or values. As a result, players may intentionally select avatars, characters, plots, vehicles, and other game elements over others based on their political values rather than the goals of winning or accruing more credits or points in a game.

Previous literature has focused on antecedents and effects of selective exposure to political information via a wide range of media channels (Iyengar & Hahn, 2009; Knobloch-Westerwick & Meng, 2011; Stroud, 2010). Recently, scholars turn to selective behaviors such as selective disclosure of political attitudes (Cowan & Baldassarri, 2018) and selective following on Twitter (Lee & Hahn, 2018). However, no prior study has considered selective behaviors that are motivated by political predispositions in video games, which are one of the most prevalent computer-mediated media experiences daily. The fact that players can interact with others in a multiplayer online game may even boost the willingness to sustain one’s political self-concept, leading to more selective behaviors that are personally important and relevant in a virtual social setting.

This study explores whether political ideology and military identity would influence in-game behaviors and the consequences of such selection in an MMO. Specifically, we combined unobtrusive behavioral log data in *World of Tanks* (*WoT*) and self-reported surveys to examine how political ideology and military identity influence the selection of vehicles of different national origins. *WoT* is an MMO game in which players drive a tank in a bounded first-person environment and try to attack the opponents in a team-based battle. *WoT* is a game with history: It features over 600 authentic tanks from 11 nations in the mid-20th century. Each country has its unique collection of tanks (see Table 1 & 2). Players’ choices of tanks are bounded by the tank’s original country, thus making *WoT* particularly suitable to examine whether and how players’ political ideology influences their selection of tanks and selective play of the game.

Results of longitudinal multilevel modeling (MLM) show that political ideology indeed associated selective use of vehicles of different nations (U.S., U.S.S.R., and China in particular). Such preferences over vehicles are largely consistent with recent public opinion polls of partisans’ attitudes towards these three countries. The effects of selection over tanks on gaming time, total battle, team battle, and win rate varied across players and within players at the player-week level. For a specific player, the selection of more U.S.S.R and Chinese vehicles was associated with a longer session spent in the game and more battles. For the between-person effects, players who used more U.S. tanks tended to have fewer total battles and team battles, while those Soviet vehicles fans spent more time in *WoT* and played more battles. These selections were generally irrelevant to players’ in-game performance, i.e. win rate, except that those who used U.S.S.R. vehicles more were sightly less likely to conquer in the combat field.

The study advances the selective media use literature in two ways. First, it conceptualizes and empirically tests players’ selective play in a video game based on their political and military identities. Second, the study shows that ideology-motivated selection in a video game may have significant impacts on players’ loyalty, behaviors, and performance. These results serve as the first step to further explore politically motivated behaviors and their consequences in the context of video games. The study also has important implications for game designers and game companies that a balanced design incorporating elements accommodating a wider political spectrum might improve players’ loyalty and experiences.

**Political Ideology and Selective Behaviors in Media Use**

Previous work has revealed that individuals selectively consume media content based on their political predispositions, a phenomenon called partisan selective exposure (Tsygankov, 2017). As a result, individuals might develop more polarized or extreme attitudes on contentious political issues as they are exposed to more like-minded information and opinions (Mutz, 2006). It is widely documented that political identification strongly predicts selective exposure in various media including both controversial and soft news (Iyengar & Hahn, 2009), TV news (Bou-Hamad & Yehya, 2020), and online searches (Knobloch‐Westerwick et al., 2015), just to name a few. Selective exposure can be categorized into two types. Reinforcement seeking refers to consuming information that is consistent with one’s views. Challenge avoidance refers to intentionally avoiding counter attitudinal opinions. Reinforcement seeking seems to be the dominant type of selective exposure (Garrett, 2009).

Selective exposure research is primarily concerned with information-seeking via various media channels. Recent scholarship has examined other selective behaviors that are driven by political partisanship and the effects of such behaviors. In political discussion networks, Americans selectively withhold their political identity from those with whom they disagree to avoid conflict (Cowan & Baldassarri, 2018). Empirical studies suggest that political bloggers tend to share hyperlinks that are consistent with their political stand (Jacobson et al., 2016). On social media, selectively unfriending and unfollowing were predicted by political interest and political discussion network size (Skoric et al., 2018). By filtering out people with dissimilar political ideologies, users control the timeline and information flow that will not lead to cognitive dissonance and negative emotions such as anger and anxiety (Lu & Gall Myrick, 2016). Another study documented that Facebook use on protest-related information was associated with selective avoidance such as isolating themselves from undesirable dissonant views and breaking with social ties with people from “the other camp” (Zhu et al., 2017).

Scholars also explored the mechanisms behind political selective behaviors related to media use. First, selective exposure can be attributed to both emotional and physiological discomfort (Blanton et al., 2012). Second, people judge attitude-consistent and neutral news sources simply more credible (Metzger et al., 2020). Third, self-consistency theory suggests that inconsistency of information or actions with the self-concept will produce dissonance (Aronson, 1968). As political partisanship is an important component of political self-concept, politically motivated selective behaviors help manage the self-concept and increase the accessibility of the political self-concept (Knobloch-Westerwick & Meng, 2011). A stronger political social identity was found to be related to a higher level of selective exposure (Dvir-Gvirsman, 2019; Kim & Lu, 2020). When identity threat is present, greater partisan media selectivity emerges (Long et al., 2019). To conclude, it is possible that players’ political self-concept can be triggered by certain elements or cues in a video game so that players are motivated to play with some elements over others in a game to reduce identity threat, negative emotion, and cognitive dissonance.

**Towards Selective Play: Extending Selective Behaviors to Video Game**

To study the political use in video games, scholars have explored the political or civic impact of playing video games. Early studies are concerned about the replacement effect that decreases news media use, civic engagement, and political discussion (Williams, 2006). It seems to be safe to conclude that playing video games does not lead to a decreased level of civic engagement. With proper parental involvement, playing action games positively predicts civic engagement (Ferguson & Garza, 2011). Another study found that playing more MMOs leads to greater gaming social capital, which enhances the civic participation of players (Molyneux et al., 2015).

Scholars later notice that a growing number of video games offer chances to experience civic action and political life (Kahne et al., 2012). Skoric and Kwan (2011) found that civic gaming use can predict a higher level of online political participation. In a game where children design a virtual city, Bers and Chau (2006) observed the young players develop civic conservations and tested their democratic values and attitudes. To quickly sum up, there is at least some evidence to suggest that gamers receive social capital and may engage with civic affairs thereafter.

Yet, to our best knowledge, no research has yet to examine whether political ideology or other social identities play a role in shaping gamers’ behaviors. Although individuals do not seek information in video games like they do for watching the news, certain politically related cues or elements in a video game may prime players to maintain their political self-concept (Knobloch-Westerwick & Meng, 2011) so that gamers may selectively choose avatars, characters, and plots that align with the preexisting political values or preferences. While previous work (Klimmt et al., 2010) found that identification with characters in the video game can shift self-perceptions, it is unknown if players would select certain game elements that fit their political self-concept, indicated by political ideology. Certain video game genres such as fighting, shooting, or role-playing in a military setting could offer ample opportunities for researchers to examine whether ideology-based selective play occurs, and if so, what are the consequences. Understanding this question not only helps to reveal complicated motivations behind gamers’ in-game behaviors but also sheds light on how game companies design a game where elements and cues might attract players from different ideological camps.

**Political Ideology and Americans’ Attitudes towards Different Countries**

As the current study looks at how players select combatting vehicles in a wargame, the national origins of vehicles may shape how players select based on their preferences over the nations. Table 1 summarizes the number of tanks and example models of the 11 nations in WoT. We focus on three nations, the U.S., the U.S.S.R., and China, because the U.S. is the most favorable country by Americans while Russia and China receive the least likes in the U.S. public opinion polls. Besides, as the following section shows, liberals and conservatives have distinctive attitudes towards these counties, thus making them suitable for investigation in the current study. This section reviews Americans’ attitudes towards the U.S., the U.S.S.R., and China and how much public opinion is divided with the political line.

The public opinion in the U.S. about the Soviet Union was not at all stable in the past decades. Current affairs seem to shape Americans’ attitudes towards the former Socialist state (Hinckley, 1989). With the invasion of Afghanistan in 1973, Americans’ fondness towards the Soviets dropped sharply after a long period of increase since the peak of the Cold War in the 1950s (T. W. Smith, 1983). Entering the 1990s, an improved image of the Soviet Union appeared in the major polls, likely due to a perception that the cold war was ending (Richman, 1991). Lacking direct observation of the country and its people, Americans largely rely on media to form their opinions toward the Soviet Union. Increased world news consumption was correlated with a more favorable attitude towards the Soviet Union of Americans in the mid-1980s (Perry, 1989). A more recent examination of the American media that portrays Russia from 2008 to 2014 found that Russia was frequently framed as a neo-Soviet autocracy in a negative way (Tsygankov, 2017).

A more nuanced review of the literature on international relations and foreign policy would reveal the fact that both party identification and ideology would have an impact on foreign policy postures and specific policies towards the Soviet Union. Compared to their liberal peers, conservative Americans perceived the Soviet Union as more untrustworthy and threatening and supported that the U.S. should contain “the spread of Soviet influence and communism” (Hurwitz & Peffley, 1990, p. 14).

China was perceived as much more positive than a previous negative image during the 1970s in the U.S. With the diplomatic recognition of China, the majority of the public also hoped to see a growing trade with China (De Boer, 1980). Public opinion in America towards China is divided by political ideology. Self-reported conservatives were much more likely than liberals to view China as a threat, to hold negative views of the Chinese government, and to have more prejudice towards the Chinese people. The political ideology was a much more consistent and stronger predictor than party affiliation of those attitudes (Gries & Crowson, 2010). Communism appears to be the largest source of ideological divergence (Gries, 2014). On the economic issues, liberal Americans expressed much fewer interests in the U.S.-China trade war (Jin et al., 2021). For the overall policy preference towards China, conservative ideology was both directly and indirectly associated with support for the containment of China, mediated by the negative views on the Chinese government (Gries et al., 2012). In the 2016 presidential election, conservative Trump supporters were more attracted to the hawkish stance towards China as they perceived their status had been threatened (Mutz, 2018).

A recent survey (M. Smith, 2020) revealed that the U.S. was the most popular country among Americans, while China and Russia were among the top 10 countries on which Americans disliked the most. Nearly half of the Americans rated China and Russia as negative. The survey also showed that the favorability towards the three countries follows a political line to a different extent. While 95% of Republicans favored America, only 68% of Democrats approved. About 3% more Republicans like Russian Federation than Democrats. However, Democrats preferred China much more than Republicans by 9%.

To summarize, the above-cited studies and polls suggest that, historically conservatives might view U.S.S.R. more negatively but recent data show that conservatives slightly prefer Russia (the largest constituent of the Soviet Union) over liberals. As for China, liberal Americans have generally more positive views. In addition, liberals are more critical of their own country, the U.S., than conservatives. Besides political ideology, considering the military wargaming nature of WoT, we also intend to explore whether military service experience would shape players’ vehicles selection. As the current study is the first of its kind, we would like to ask exploratory research questions instead of making more definitive hypotheses. Therefore, we ask:

Research Question 1 (RQ1): Are (a) political ideology and (b) military service associated with the selective choice of vehicles? If so, how?

Research Question 2 (RQ2): Is there a relationship between the selective choice of vehicles and in-game behaviors and performance? If so, how?

**Method**

***Data***

We combined the unobtrusive log data of players’ in-game behaviors and two batches of survey data conducted in April 2019 (*N* = 1,977) and February 2021 (*N* = 2,923) respectively, which are provided by the publisher of *World of Tanks (WoT)*, Wargaming.net. Direct survey participation invitations were distributed from the game publisher to players who have played at least 200 battles on the North American server. Respondents’ corresponding unobtrusive behavioral data were matched with their survey responses using a unique player ID. The ID was anonymized and encrypted before reaching the research team.

***Measures***

**Political Ideology.**Participants were asked to report their political ideology on a 7-point Likert scale (1 = “Very Conversative”, 4 = “Neutral”, 7 = “Very Liberal”). To better show the difference between liberal and conservative players, we regrouped the original data into three categories: “Very Liberal”, “Liberal” and “Slightly Liberal” were combined as “Liberal” (*N* = 433, 18.4%); “Very Conservative”, “Conservative” and “Conservative” were grouped as “Conservative (*N* = 1,209, 51.4%), and “Neutral” remains unchanged (*N* = 712, 30.2%).

**Military Service.**Participants were asked if they had served or were serving the U.S. Army either in the active duty or the reserve component. We coded participants who were serving or had served the Army as 1 (*N* = 764, 32.4%) and those who had never served the Army as 0 (*N* = 1,367, 58.0%). 224 participants (9.6%) preferred not to answer.

**Selective Choice of Vehicles of Different Nations.**We calculated the percentage of selecting the U.S., Chinese, and U.S.S.R. vehicles. For each nation, we divided the number of battles where a player selected a vehicle of the nation in a week by the total number of battles a player played in that week. Therefore, we have the weekly aggregated proportion of using the U.S. vehicles (*M* = .26, *SD* = .26), Chinese vehicles (*M* = .03, *SD* = .08), and the Soviet tanks (*M* = .19, *SD* = .20).

**Gaming Time.**We accessed the daily in-game time (hours) of each player. The in-game time included both in-battle time and idle time when a player “stays” at the lobby. We aggregated the daily gaming time to a week to account for the daily difference between weekdays and weekends. Here we reported the mean and standard deviation across all 16 weeks (*M* = 18.5, *SD* = 25.1).

**Battle Count.** We retrieved the weekly battle a player had across the study period. In WoT, there are several modes of battles: random battle, frontline, ranked battle, team training, clan wars, and strongholds. For example, random battles match 30 players into two bases while ranked battles are only open to players above certain tiers where they can earn a rating spot in a season by outstanding battle efficiency. This measure includes all types of battles per week per player (*M* = 62.78, *SD* = 73.75).

**Team Battle Count.** Among the aforementioned various types of battles, players can form their team before the game starts in team training mode and platoon mode. To assess to what extent players team up with friends in a game, we aggregated the weekly team battle for each player (*M* = .04, *SD* = .16).

**Win Rate.**We calculated the weekly aggregated win rate for each player by dividing the total number of battles a player won in a week by the total number of battles a player had in that week. Here we reported the mean and standard deviation across all 16 weeks (*M* = 0.5, *SD* = 0.1).

**Player’s Rating.**We leveraged the global rating score developed by Wargaming.net to measure the overall performance of a player in WoT. The player’s rating is a comprehensive measure that considers achievements in random battles, vehicles, and performance in ranked battles. We use the rating as of Oct 20, 2020 (the first day in our study period) for players as one of the covariates of in-gaming behavior and performance (*M* = 4,455.4, *SD* = 1,765.4).

**The number of Unlocked Vehicles.**Players can purchase a wide variety of vehicles in WoT using in-game credits or real money to unlock more powerful vehicles. We included the number of unlocked vehicles as of Oct 20, 2020, as one of the covariates of in-gaming behavior and performance (*M* = 157.8, *SD* = 95.1).

**Lifetime Battle Count.**We also included the lifetime battle count as of Oct 20, 2020 of players as a covariate (*M* = 20,820.2, *SD* = 17,585.5).

**Demographics.**Participants reported their age (*M* = 45.4, *SD* = 15.7), income (7-point Likert scale, *M* = 3.8, *SD* = 1.8), and education (8-point Likert scale, *M* = 3.9, *SD* = 1.5) in the surveys.

***Statistical Analysis***

           The dataset contains a daily repeated measure of the selection of vehicles of U.S., U.S.S.R., or China, gaming time, battle count, team battle count, and win rate. It also includes self-reported political ideology, military service experience, and demographics. The two-level hierarchical data structure with daily measures (level 1) nested within individuals (level 2) allows us to use multilevel growth modeling to analyze the variations of individual-level growth patterns over the study period.

The original time-varying variables (i.e. vehicle selection and in-game log variables) are highly volatile at the daily level. To minimize the effects of weekdays and weekends, we aggregated the data to a weekly level. We first examined the longitudinal trend of selecting vehicles of different nations. Overall, there is a slightly decreasing trend in selecting U.S. vehicles. While the selection of U.S.S.R vehicles fluctuates across weeks, players seemed to use more Chinese vehicles at the beginning and the end of the study period (see Figure 1 & Figure 2). However, we are less interested in the growth rate of each specific time point, we decided to include time as a linear growth rate indicator in models answering RQ1. We adopted a random intercept model to predict the weekly use of vehicles based on political ideology and military service where the intercept is allowed to vary across players. We included political ideology and military service only in the baseline models, and incorporate game behavioral variables, demographics, and time as covariates in the full model.

To answer RQ2, we used a random slope model to predict the effects of selecting vehicles of different nations on gaming time, battle count, team battle count, and win rate where both the intercept and the effects of selecting vehicles are allowed to vary across individuals. In each model, we included the selection of tanks of different nations, political ideology, military service, game behavioral variables, demographics, and time. It is worth noting that we treated the time variable slightly differently from the models in answering RQ1. The reason is that the outcome variables in RQ2 are highly sensitive to different time phases within the study period. Since our study period covers festival season, individuals spent much more time and played more battles in WoT than usual as suggested in Figures 3 & 4. In addition, WoT also offers bonuses and events during festival seasons. Therefore, we decided to assess the varying growth rate of different phases within the study period rather than simply assume the effect of time is a linear one.

In doing so, we first conducted an omnibus test of time using a compound symmetry model (Snijders & Bosker, 2012) where we allow each time point to have its mean in predicting gaming time (see Appendix Table 1 for the coefficients of different weeks). We found that, overall, the effects of the week increase until week 11 then fall back to the end of the study period. Considering the festival season effect in December, we divided the 16 weeks into three phases: phase 1 (week 1 to week 6), phase 2 (week 7 to week 11), and phase 3 (week 12 to week 16). We tested if the piecewise growth model is significantly better than the growth curve model, the results support the former (see Appendix Table 2 for details).

To decompose the between-person and within-person effects of vehicles selection, we first calculated the cluster mean of weekly vehicle selection (i.e., individual mean across the 16 weeks) to capture the between-person effects; then we centered the weekly vehicles at the individual mean to capture the within-person effects. As our primary interest is to examine the relationship between weekly vehicles selection and the outcome variables, we only allow the slopes of cluster mean-centered predictors to vary across individuals.

The dataset contains less than 1% female players, therefore, we kept male players only to make sure that our interpretation of the analysis results is not overestimated based on a small sample of female players. We also removed players who were younger than 18 years old. The final dataset contains 2,354 unique players and 37,664 individual weekly observations. Highly skewed outcome variables (e.g., gaming time) were log-transformed. To ensure that variable estimates are comparable and to reduce potential convergence issues in maximum likelihood-based models, we rescaled all continuous variables between 0 and 1. Vehicles selection variables are in nature percentage value, so there is no need to rescale them. We use listwise deletion in the modeling, therefore, the sample size slightly varies across models due to different model specifications. We also compared the self-reported variables from the two batches and did not find any systematic differences. Though the first batch was conducted in 2019, we assume that demographics, political ideology, and military service would not significantly change for a player. Analyses were run with R 4.1.1.

**Results**

Figure 1 and Figure 2 show the weekly aggregated proportion of selecting U.S., Chinese, and U.S.S.R. vehicles in WoT by political ideology and military service. The graphs indicate that conservative players selected more U.S. tanks but fewer Chinese vehicles than liberals. For Soviet vehicles, the ideological divide is less clear. Military service experience seems to boost the selection of U.S. tanks but to suppress players’ preferences over Soviet and Chinese vehicles. Differences aside, it is worth noting that overall, the players prefer U.S. vehicles the most. While U.S.S.R. vehicles were also frequently selected, Chinese tanks were approximately three times less likely to be used.

Before we present the multilevel modeling results, we first reported the intraclass correlations to see how much variance of outcome variables in a baseline random intercept model can be explained by individual characteristics. Results indicate that differences across individuals account for 63.6% of the variance of selecting U.S. vehicles, 49.6% of the variance of selecting U.S.S.R. tanks, 35.1% of using Chinese vehicles, 58.6% of the variance of weekly gaming time, 54.8% of the variance of the weekly battle count, 50.4% of the variance of weekly team battles, and 12.3% of the variance of win rate. The design effects of all models exceed the threshold of 1.1 suggested by Lai and Kwok (2015) to adopt MLM. To sum up, this high proportion of individual-level variance over total variance requires MLM.

Table 3 presents the MLM results on the effects of political ideology and military service on the selection of vehicles of different nations. The baseline models (see Table 3 Model 1 – 3) suggest that holding other variables constant, liberal players preferred Chinese tanks while choosing U.S. vehicles less than their conservative and ideology-neutral peers. Players who have served or are serving the Army significantly selected U.S. vehicles more and disliked U.S.S.R. and Chinese vehicles. Yet, the effects of military service were not robust in the full models (see Table 3 Model 4 – 6) once game-related behaviors, demographics, and time were controlled. For political ideology, being conservative is significantly associated with selecting U.S.S.R. vehicles in the full model (Model 5). The effects of being liberal remain about the same. In addition, the random intercept terms are significant across six models. Thus, in answering RQ1, we concluded that political ideology is associated with the selection of vehicles from different nations and the corresponding directions of such relationships are largely consistent with a public opinion poll on the preferences over different countries by liberal and conservative Americans.

Figure 3 and Figure 4 display the longitudinal trend and fluctuation of gaming time, total battles, team battles, and win rate by political ideology and military service in 16 weeks from late Oct 2020 to early Feb 2021. Concerning RQ2 on the effects of selective use of different vehicles on a set of in-game behaviors and performance, Table 4 shows the results of four multilevel piecewise growth models with random slopes predicting gaming time (Model 7), battle count (Model 8), team battle count (Model 9) and win rate (Model 10). The cluster mean-centered (cmc) variables in the table suggest the within-person effect of selecting vehicles on the outcome variables. For a certain player, using more U.S. vehicles in a certain week seems to be irrelevant to the four in-gaming behaviors and performance. However, choosing more U.S.S.R and Chinese tanks may lead to longer time spent in WoT and more battles. The use of U.S.S.R vehicles is also positively associated with an increase in playing more team battles. The cluster mean (cm) variables indicate the between-person effects of tank choice. Players who on average preferred U.S. vehicles tended to play fewer total battles and team battles. Players who selected U.S.S.R. vehicles more often than other players significantly spent more time in WoT, played more all types of battles including team battle but had slightly lower win rate. Figure 5 plots the marginal effects of within-person effects of vehicle selection on the outcome variables. As for the time effects, as we expected, players spent more time within WoT and played more battles in the festival season.

The time effect is minimal or statistically insignificant in influencing the win rate. All random slopes terms of within-person effects are significant, indicating that the effects of using different vehicles vary across players. The larger variance in the effect of using Chinese vehicles is likely due to (1) fewer options of using Chinese vehicles (*n* = 47) compared with U.S. (*n* = 108) and U.S.S.R tanks (*n* = 141); (2) the actual lower proportion of using Chinese tanks with many players never used even once during the study period. Notice that the model fits for Model 10 (win rate) are generally less satisfactory than the other models, which provides extra evidence that selecting vehicles from different nations might have less to do with the battle efficiency but more rest on the preexisting attitudes on countries where Americans extremely like or dislike from various ideological camps.

**Concluding Discussion**

           Research has long shown that political ideology predicts selective exposure to media contents, including selective consumption of traditional media, such as TV news (Bou-Hamad & Yehya, 2020), as well as selective use of emerging new media platforms, such as selective online searches (Knobloch‐Westerwick et al., 2015) and selective interactions on social media (Lee & Hahn, 2018). Despite a marked increase of video game users and the vast amount of time players spent on video games (Entertainment Software Association, 2021), few have attempted to investigate politically motivated selective behaviors in the context of video games. Leveraging rare access to players’ in-game behavior log data and their self-reported data, this study found that political ideology indeed predicted the selective use of in-game vehicles from different nations, which in turn predicted players’ unique patterns of in-game behaviors and performance. Theoretically, this study extends the selective behaviors literature to video game settings and provides initial evidence that individuals’ political dispositions and military identity influence their selective interactions with game elements and predict their unique behavioral patterns in the virtual world. Practically, the results of this study provide insights for game designers and game companies: A balanced design that affords game elements accommodating a wider political spectrum may boost player activation, improve players' experience, and enhance player loyalty and retention.

           Our primary finding in the current study is that political ideology indeed exerted influence on players’ selection of tanks of different nations and the partisan preferences seem to align with a recent public opinion poll on attitudes towards these countries in America. First of all, the fact that all players in our sample disproportionately favored the U.S. tanks is not surprising given our sample is drawn from the North America server of WoT where the majority of the player are Americans. Choosing the vehicles from their own country can be a more immersive playing experience in a wargame. The political ideology divides tank preferences among U.S., U.S.S.R., and Chinese vehicles. Interestingly, the preferences are consistent with recent polls on how liberal and conservative Americans view the three countries.

Given that important in-game variables such as overall players’ rating and the number of unlocked vehicles have been controlled for, this finding is particularly interesting. Liberals and conservatives seem to select vehicles based on their perceptions of the three countries. As battles in WoT is team-based and highly competitive, it is likely that selecting vehicles of a certain nation may lead to an immersive playing experience of imagining fighting for that country. Thus, the more favorable perception a player has towards the nation, the more positive emotion such playing experience may activate, which also strengthens the consistency of one’s political self-concept (Knobloch-Westerwick & Meng, 2011).

           In addition, we explored how the selective choice of vehicles may relate to players’ in-game behaviors and performance, namely, gaming time, battle count, team battle count, and win rate. Results showed that the selection of more U.S.S.R and Chinese tanks was positively associated with players’ time spent in the game and the number of battles they had played. This might be because players who used more U.S.S.R and Chinese tanks are less constrained by their ideology, have a wider range of choices over tanks, thus exploring the game more and spending more time in the game. Players who used more U.S. tanks played fewer team battles, whereas players who used more U.S.S.R tanks played more team battles. It is possible that using U.S.S.R tanks indicates that players are more versatile in using different tanks, thus they are in a better position when cooperating with other players. Another potential explanation is that playing U.S. tanks might be an indicator of an individualistic playing style, although this merits further research. The selection of tanks from different nations had nothing to do with players’ win rate, suggesting that players do not select tanks based on their battle efficiency. This further supports our argument: players’ selective play of tanks from different nations is more likely to be driven by ideology-motivated preferences rather than utility-motivated calculation.

           It is also interesting to note that the effects of selecting U.S.S.R. tanks are significant at both within-person and between-person levels. While for the effects of selecting the U.S. and Chinese vehicles, we only found between-person and within-person effects, respectively. Thus, the effects of using U.S.S.R. and U.S. tanks are more likely to be associated with individual characteristics, which should be further explored.

           This study has several limitations. First, despite the privileged access to players’ in-game behavioral data and their self-reported data, this is in the end data drawn from one game, and one played predominantly by the male. Future research is encouraged to replicate our approach to examine the selective play in games of different genres and with a more diverse user base to increase generalizability. Second, as an exploratory step, this study provides no evidence of the psychological mechanism of selective play. Future research should use methods such as surveys and experiment to probe constructs like political self-concept or cognitive dissonance to test the mechanism of effects found in this study. Third, this study only looks at game-related consequences due to selective play. It is possible that in a highly politically laden or wargame setting, selective play may contribute to political polarization or ideological extremization, which merits further research to examine the more complicated psychological and political outcomes due to selective play in the video game.

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**Tables**

**Table 1**

*Summary of Available Vehicles Across Nations in WoT*

|  |  |  |
| --- | --- | --- |
| Nation | Number of Vehicles | Examples |
| U.S.S.R. | 141 | T-34, IS-7 |
| Germany | 133 | StuG III, Panther |
| U.S.A. | 108 | Sherman, T32 |
| U.K. | 86 | Churchill VII, FV304 |
| France | 80 | AMX 13 75 |
| China | 47 | WZ-132, WZ-111 |
| Sweden | 32 | Emil II, UDES 03 |
| Japan | 26 | Type 61, O-I |
| Poland | 21 | Pudel, 45TP Habicha |
| Czechoslovakia | 18 | TVP T 50/51 |
| Italy | 18 | P26/40, Prototipo Standard B |

Source: https://worldoftanks.com/en/game/

**Table 2**

*Summary of Types of Vehicles Across Selected Nations in WoT*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | U.S.A. | | U.S.S.R. | | China | |
| Type of vehicles | Count | Percentage | Count | Percentage | Count | Percentage |
| Light tanks | 19 | 17.6% | 27 | 19.1% | 12 | 29.3% |
| Medium tanks | 24 | 22.2% | 30 | 21.3% | 10 | 24.4% |
| Heavy tanks | 18 | 16.7% | 37 | 26.2% | 8 | 19.5% |
| Tank destroyers | 21 | 19.4% | 21 | 14.9% | 10 | 24.4% |
| Self-propelled guns | 11 | 10.2% | 10 | 7.1% | 0 | 0.0% |
| Other | 15 | 13.9% | 16 | 11.3% | 1 | 2.4% |
| Total | 108 | 100% | 141 | 100% | 41 | 100% |

Source: https://worldoftanks.com/en/game/

**Table 3**

Multilevel Models of Effects of Political Ideology and Military Service on Selecting Vehicles

|  | U.S.  (Baseline Model 1) | U.S.S.R. (Baseline Model 2) | Chinese (Baseline Model 3) | U.S.  (Full Model 4) | U.S.S.R.  (Full Model 5) | Chinese  (Full Model 6) |
| --- | --- | --- | --- | --- | --- | --- |
| Fixed effects: | Estimate  (SE) | Estimate  (SE) | Estimate  (SE) | Estimate  (SE) | Estimate  (SE) | Estimate  (SE) |
| Intercept | 0.254\*\*\* | 0.186\*\*\* | 0.030\*\*\* | 0.305\*\*\* | 0.178\*\*\* | 0.029\*\*\* |
|  | (0.009) | (0.006) | (0.002) | (0.010) | (0.007) | (0.003) |
| Military service | 0.043\*\*\* | -0.020\*\* | -0.006\* | 0.012 | -0.011 | -0.003 |
|  | (0.010) | (0.007) | (0.002) | (0.011) | (0.008) | (0.003) |
| Liberal | -0.037\*\* | 0.000 | 0.008\* | -0.044\*\* | 0.010 | 0.009\* |
|  | (0.014) | (0.010) | (0.003) | (0.015) | (0.011) | (0.004) |
| Conservative | -0.006 | 0.012 | 0.000 | -0.021+ | 0.019\* | 0.002 |
|  | (0.011) | (0.008) | (0.003) | (0.012) | (0.008) | (0.003) |
| *Demographics* |  |  |  |  |  |  |
| Age |  |  |  | 0.040\*\*\* | -0.017\*\*\* | -0.006\*\*\* |
|  |  |  |  | (0.006) | (0.005) | (0.002) |
| Income |  |  |  | 0.010+ | -0.001 | 0.001 |
|  |  |  |  | (0.006) | (0.004) | (0.002) |
| Education |  |  |  | -0.001 | -0.006 | -0.001 |
|  |  |  |  | (0.006) | (0.004) | (0.001) |
| *Game behavioral variables* |  |  |  |  |  |  |
| Player rating (T0) |  |  |  | -0.006 | -0.008+ | 0.000 |
|  |  |  |  | (0.006) | (0.005) | (0.002) |
| Unlocked vehicles (T0) |  |  |  | -0.055\*\*\* | 0.003 | 0.007\*\*\* |
|  |  |  |  | (0.007) | (0.005) | (0.002) |
| Lifetime battle count (T0) |  |  |  | 0.009 | -0.001 | -0.001 |
|  |  |  |  | (0.007) | (0.005) | (0.002) |
| *Time* |  |  |  | -0.004\*\*\* | 0.000 | 0.000 |
|  |  |  |  | (0.000) | (0.000) | (0.000) |
| Random effects: |  |  |  |  |  |  |
| SD (Intercept) | 0.211 | 0.141 | 0.048 | 0.199 | 0.141 | 0.048 |
| SD (Observation) | 0.158 | 0.143 | 0.065 | 0.158 | 0.143 | 0.066 |
| N (Individuals/Observations) | 2,130/26,176 | 2,130/26,186 | 2,130/26,186 | 1,804/22,155 | 1,804/22,172 | 1,804/22,172 |
| AIC | -15782.8 | -22376.4 | -64479.0 | -13671.5 | -18662.3 | -53892.3 |
| BIC | -15733.7 | -22327.3 | -64429.9 | -13567.4 | -18558.2 | -53788.2 |
| Log.Lik. | 7897.390 | 11194.178 | 32245.478 | 6848.732 | 9344.150 | 26959.143 |
| REMLcrit | -15794.781 | -22388.357 | -64490.955 | -13697.463 | -18688.299 | -53918.285 |
| Pseudo Conditional *R2* | 0.642 | 0.494 | 0.350 | 0.645 | 0.498 | 0.352 |

*Note*. SE = standard error. SD = standard deviation. AIC = Akaike’s information criterion. BIC = Bayesian information criterion. Log.Lik. = Log-Likelihood. REMLcrit = REML criterion at convergence. Pseudo *R2* suggested by Nakagawa et al. (2017).

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001. +*p* < .10.

**Table 4**

*Multilevel Piecewise Growth Models Predicting Gaming Time, Battle Count, Team Battle, and Win Rate*

|  | Gaming time (Model 7) | Battle count (Model 8) | Team battle (Model 9) | Win rate (Model 10) |
| --- | --- | --- | --- | --- |
| Fixed effects: | Estimate  (SE) | Estimate  (SE) | Estimate  (SE) | Estimate  (SE) |
| Intercept | 2.342\*\*\* | 3.556\*\*\* | 0.038\*\*\* | 0.470\*\*\* |
|  | (0.066) | (0.068) | (0.006) | (0.004) |
| U.S. vehicles (cmc) | -0.081 | -0.059 | -0.008 | 0.003 |
|  | (0.051) | (0.058) | (0.005) | (0.009) |
| Chinese vehicles (cmc) | 0.498\*\*\* | 0.913\*\*\* | 0.002 | 0.022 |
|  | (0.127) | (0.152) | (0.011) | (0.017) |
| U.S.S.R. vehicles (cmc) | 0.234\*\*\* | 0.415\*\*\* | 0.025\*\*\* | 0.001 |
|  | (0.056) | (0.066) | (0.006) | (0.009) |
| U.S. vehicles (cm) | -0.202+ | -0.236\* | -0.023\* | -0.001 |
|  | (0.108) | (0.112) | (0.010) | (0.006) |
| Chinese vehicles (cm) | 0.151 | 0.083 | -0.017 | -0.038+ |
|  | (0.393) | (0.412) | (0.034) | (0.023) |
| U.S.S.R. vehicles (cm) | 0.434\*\* | 0.423\*\* | 0.058\*\*\* | -0.020\* |
|  | (0.147) | (0.154) | (0.013) | (0.009) |
| Liberal | -0.007 | 0.032 | 0.002 | 0.008\* |
|  | (0.063) | (0.064) | (0.006) | (0.004) |
| Conservative | -0.048 | -0.049 | 0.003 | 0.002 |
|  | (0.050) | (0.051) | (0.004) | (0.003) |
| Military service | -0.080+ | -0.084+ | -0.002 | 0.000 |
|  | (0.045) | (0.046) | (0.004) | (0.003) |
| *Game performance* |  |  |  |  |
|  |  |  |  |  |
| Player rating (T0) | -0.029 | -0.025 | 0.002 | 0.027\*\*\* |
|  | (0.026) | (0.027) | (0.002) | (0.002) |
| Unlocked vehicles (T0) | -0.044 | -0.053+ | 0.006\* | -0.004\*\* |
|  | (0.030) | (0.030) | (0.003) | (0.002) |
| Lifetime battle count (T0) | 0.365\*\*\* | 0.368\*\*\* | 0.011\*\*\* | 0.001 |
|  | (0.031) | (0.032) | (0.003) | (0.002) |
| *Demographics* |  |  |  |  |
|  |  |  |  |  |
| Age | 0.001 | -0.050+ | -0.005\* | -0.006\*\*\* |
|  | (0.028) | (0.028) | (0.002) | (0.002) |
| Education | -0.012 | -0.007 | 0.000 | 0.002 |
|  | (0.024) | (0.025) | (0.002) | (0.001) |
| Income | 0.113\*\*\* | 0.053\* | -0.002 | -0.001 |
|  | (0.025) | (0.026) | (0.002) | (0.001) |
| *Time* |  |  |  |  |
|  |  |  |  |  |
| Phase 1 | 0.048\*\*\* | 0.055\*\*\* | -0.003\*\*\* | 0.003\*\*\* |
|  | (0.003) | (0.003) | (0.000) | (0.001) |
| Phase 2 | 0.024\*\*\* | 0.019\*\*\* | 0.001 | 0.002\*\* |
|  | (0.004) | (0.004) | (0.000) | (0.001) |
| Phase 3 | -0.089\*\*\* | -0.091\*\*\* | -0.004\*\*\* | -0.001+ |
|  | (0.005) | (0.005) | (0.001) | (0.001) |
| Random effects: |  |  |  |  |
| SD (Intercept) | 0.839 | 0.863 | 0.074 | 0.036 |
| SD (U.S. cmc) | 1.212\*\*\* | 1.530\*\*\* | 0.106\*\*\* | 0.223\*\*\* |
| SD (Chinese cmc) | 1.670\*\*\* | 2.206\*\*\* | 0.122\*\*\* | 0.212\*\*\* |
| SD (U.S.S.R. cmc) | 1.298\*\*\* | 1.701\*\*\* | 0.163\*\*\* | 0.195\*\*\* |
| SD (Observation) | 0.664 | 0.686 | 0.074 | 0.112 |
| AIC | 51994.4 | 54058.2 | -46060.4 | -30719.4 |
| BIC | 52234.5 | 54298.3 | -45820.3 | -30479.3 |
| Log.Lik. | -25967.200 | -26999.117 | 23060.213 | 15389.679 |
| Pseudo Conditional R2 | 0.676 | 0.679 | 0.556 | 0.241 |
| N (Ind/Obs) | 1,804/  22,103 | 1,804/  22,103 | 1,804/  22,103 | 1,804/  22,103 |

*Note*. cmc = cluster mean centered. cm = cluster mean. SE = standard error. SD = standard deviation. AIC = Akaike’s information criterion. BIC = Bayesian information criterion. Log.Lik. = Log-Likelihood. Pseudo *R2* suggested by Nakagawa et al. (2017).

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001. +*p* < .10.

**Figures**

**Figure 1.** *Weekly Aggregated Percentage of Selecting Vehicles by Political Ideology*

**Chart, line chart

Description automatically generated**

**Figure 2.** *Weekly Aggregated Percentage of Selecting Vehicles by Military Service*

Chart, line chart

Description automatically generated

**Figure 3.** *Weekly Aggregated Login Time, Battle, Team Battle, and Win Rate in WoT by Political Ideology*

Chart, line chart

Description automatically generated

**Figure 4.** *Weekly Aggregated Login Time, Battle, Team Battle, and Win Rate in WoT by Military Service*

Chart, line chart

Description automatically generated

**Figure 5.** *Within-Person* *Marginal Effects of Vehicle Selection in Predicting Gaming Time, Battle Count, Team Battle and Win Rate*

**A**

**Chart

Description automatically generated**

**B**

**Chart

Description automatically generated**

**C**

**A picture containing chart

Description automatically generated**

**D**

**Diagram

Description automatically generated with medium confidence**

**Appendix**

**Table 1**

*Estimates of Omnibus Test for Time*

|  |  |  |
| --- | --- | --- |
| Fixed effects: | Estimate | Phase |
| Week 1: Oct 20, 2020 | 1.70 | 1 |
| Week 2: Oct 27, 2020 | 1.78 | 1 |
| Week 3: Nov 03, 2020 | 1.78 | 1 |
| Week 4: Nov 10, 2020 | 1.81 | 1 |
| Week 5: Nov 17, 2020 | 1.79 | 1 |
| Week 6: Nov 24, 2020 | 1.98 | 1 |
| Week 7: Dec 01, 2020 | 2.01 | 2 |
| Week 8: Dec 08, 2020 | 2.26 | 2 |
| Week 9: Dec 15, 2020 | 2.33 | 2 |
| Week 10: Dec 22, 2020 | 2.37 | 2 |
| Week 11: Dec 29, 2020 | 2.40 | 2 |
| Week 12: Jan 05, 2021 | 2.37 | 3 |
| Week 13: Jan 12, 2021 | 2.16 | 3 |
| Week 14: Jan 19, 2021 | 2.16 | 3 |
| Week 15: Jan 26, 2021 | 2.17 | 3 |
| Week 16: Feb 02, 2021 | 2.07 | 3 |

We ran a chi-square test between growth curve model and the piecewise growth model. The results indicate that the piecewise growth model is significantly better than the linear growth model, *χ2* (9)*=* 4,926, *p* < .001.

**Table 2**

*Compare Growth Curve Model and Piecewise Growth Model*

|  | Gaming Time  (Growth Curve Model) | Gaming Time  (Piecewise Growth Model) |
| --- | --- | --- |
| Fixed effects: | Estimate  (SE) | Estimate  (SE) |
| (Intercept) | 1.795\*\*\* | 1.656\*\*\* |
|  | (0.031) | (0.031) |
| week | 0.037\*\*\* |  |
|  | (0.002) |  |
| phase1 |  | 0.071\*\*\* |
|  |  | (0.004) |
| phase2 |  | 0.066\*\*\* |
|  |  | (0.005) |
| phase3 |  | -0.094\*\*\* |
|  |  | (0.007) |
| Random effects: |  |  |
| SD (Intercept) | 1.458 | 1.435 |
| SD (week) | 0.098 |  |
| SD (Phase 1) |  | 0.168 |
| SD (Phase 2) |  | 0.209 |
| SD (Phase 3) |  | 0.270 |
| SD (Observation) | 0.824 | 0.709 |
| AIC | 104615.9 | 99707.9 |
| BIC | 104667.1 | 99835.9 |
| Log.Lik. | -52301.951 | -49838.948 |