Conservative Dream or Liberal Utopia?

The Moral Foundations of Cryptocurrency as a Function of Political Ideology

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Abstract

Despite its relatively brief history, cryptocurrency has already had a profound impact on the economy, with some predicting that it will eventually replace traditional fiat currencies. Historically, it had dark associations with illegal activities in the early days, although perceptions and associations likely have, in recent years, changed for the better. Thus, understanding how people perceive the morality of cryptocurrency currently forms the motivation of the current research. We, in particular, examine associations dependent on political ideology. Across both a large-scale analysis of Twitter posts (N = 959,393) and controlled survey research (N = 487), we find that cryptocurrency is currently best understood as being more strongly linked to conservative vs. liberal moral foundations. Cryptocurrency-related posts were more likely to express conservative moral foundations (Authority, Purity, Loyalty) rather than liberal moral foundations (Fairness, Care), and individual endorsement of these conservative moral foundations was associated with increased interest in crypto investment.

Keywords: cryptocurrency, moral foundations, political ideology, conservatism, liberalism

Cryptocurrency is growing around the world. Investors are attracted to potential financial gains and cryptocurrency's technology while regulators are investigating crypto's risks. The novel asset class also invites several questions from behavioral researchers. While there has been relatively little discussion of cryptocurrency in the consumer psychology literature, one important question that has important implications for both developers of crypto-based projects and regulators is the characteristics of investors who are attracted to cryptocurrency. In seminal work by Martin et al. (2022), empirical findings have shown that personality traits of Machiavellianism, narcissism, psychopathy, and sadism (known as the Dark Tetrad) are associated with interest in cryptocurrency. The current research builds on this approach to investigate the crypto community from a related perspective that has been closely associated with crypto space since the dawn of the space: morality.

The morality of the crypto community has been questioned since its beginnings in 2009 due to several events that made the headlines. Historically, cryptocurrency has been associated with illegality and thus "immoral" actions. A quick Internet search around some keywords such as Silk Road, Mt. Gox, Terra Luna, and Celsius would give readers plenty to explore about some potentially morally questionable players and events associated with the crypto space. Yet, more recently, the morality of cryptocurrency has likely been normalized, with recent research demonstrating that bitcoin-denominated pricing of products can actually reduce preference for vice goods (Park & Banker 2022). Consequently, it is not clear what moral principles are associated with the cryptocurrency space at present. What are the moral underpinnings embodied by the crypto community today? What aspects of morality predict interest in investing in cryptocurrency? Recent discussions have noted that both conservatives and liberals, groups shown to have differing moral foundations, can adopt crypto technology to advance their ideals

(The Economist, 2022), but currently little is known about the actual moral values held by the crypto community and how different political groups view the morality of cryptocurrency investments. We build on the empirical approach first introduced by Martin et al. (2022) to address these questions.

One framework to understand people's perceptions of actions and behaviors involves examining one's moral intuitions. Namely, Moral Foundations Theory (MFT) proposes that individuals make judgments about proper behavior, "approval versus disapproval," and "right versus wrong," based on six moral intuitions (recently expanded from the five foundations originally proposed) (Atari et al., 2022; Graham et al., 2009). MFT proposes six moral foundations along which proper behavior is intuitively evaluated against: Care (cherishing and protecting others), Equality (equal treatment and equal outcome), Proportionality (reward proportional to one's contribution), Loyalty (standing with one's group), Authority (following established rules and promoting stability), and Purity (abhorrence for what is unnatural). Our research thus seeks to examine which set of moral foundations predict interest in cryptocurrency. Furthermore, we investigate how one's political orientation—a construct that has been closely linked to MFT (Graham et al., 2009)—affects the interest and attitude toward cryptocurrency. In the following section, we describe why Moral Foundations Theory is particularly relevant in understanding crypto investor characteristics and discuss implications for crypto projects and politicians.

Theoretical Framework

Morality of Cryptocurrency

Historically, public perceptions of cryptocurrency were influenced by a series of scandals

that likely contributed to negative moral evaluations of the technology and its users. For example, the first well-known platform on which Bitcoin was used as a form of payment was an online marketplace named "Silk Road" where people bought and sold illicit items such as narcotics and forged passports. Other early platforms adopting Bitcoin payments, such as SatoshiDice, were also used for unregulated gambling (Popper, 2015). In addition, a number of crypto services and projects have been revealed to be fraudulent attempts to scam users out of their financial investments. As a consequence, many public figures hailed cryptocurrencies as morally-dubious projects, such as Janet Yellen, the U.S. Secretary of the Treasury, expressing her view in January 2021 that cryptocurrencies are used "mainly for illicit financing" (De, 2021). Lay perceptions of the cryptocurrency community that were formed based on these historical events may generally associate it with negative moral values.

However, more recent developments may have changed this perception. Wider adoption as well as further efforts to educate people about the benefits of blockchain technology may have helped create more positive perceptions. For instance, Janet Yellen more recently in March 2022 herself expressed that the cryptocurrency space has "grown by leaps and bounds" and "there are benefits from crypto and we recognize innovation in the payment systems can be a healthy thing." Some recent examples help to illustrate how cryptocurrencies may be used to facilitate more virtuous activities. For instance, adoption of crypto payment systems has grown among millions of workers working in foreign countries who send money home to their families in their home countries in order to avoid exorbitant fees typically demanded by traditional financial institutions. In addition, Ukrainian refugees fleeing their home country were provided with a means to transport their wealth without requiring potentially less reliable centralized financial institutions. Some argue that cryptocurrency also has environmental benefits in that it can store

excess energy production (Yaffe-Bellany, 2022). As the cryptocurrency space evolves and expands its community, what moral values do members of the public now exhibit?

In short, while cryptocurrency was historically viewed by laypeople as a tool that facilitated immoral actions of its users, new use cases and wider adoption have potentially changed the moral values associated with the community. Such complexity leaves us with an important question: Who are retail investors interested in investing in cryptocurrency and what are their moral characteristics? The current research sets out to answer this question with an exploratory approach that provides a snapshot of the moral values of individuals who are interested in investing in cryptocurrency at the current stage of adoption.

Moral Foundations Theory

One framework to understand people's attitudes toward certain behaviors and actions is by examining the moral intuitions underlying those attitudes. Namely, Moral Foundations Theory (MFT) (Graham et al., 2009, 2011; Strimling et al., 2019; Waytz et al., 2019) examines how people make judgments about proper behavior and "right versus wrong" and has recently been applied toward understanding consumer behavior (Hang et al. 2021; Tal et al. 2022; Chan & Meng 2020). MFT originally proposed five central moral foundations along which proper behavior is intuitively evaluated against: Care involves intuitions that prevent harm and caring for others; Fairness produces intuitions involving reciprocity and justice; Loyalty involves intuitions relating to sacrificing for one's in-group; Authority is associated with intuitions that respect for and obedience to authority figures, social traditions, and hierarchies; and Purity emphasizes bodily and moral purity in contrast to degradation. Some classifications have grouped Care and Fairness into a single "individualizing foundation" and Loyalty, Authority, and

Purity into the "binding" foundations (Graham et al., 2011; Haidt, 2012). Furthermore, in recent literature, Fairness has been subdivided into the two distinct foundations of Equality and Proportionality, resulting in updated MFT measures that include six foundations (MFQ-2; Atari et al., 2022). Here, Equality refers to equal treatment and outcomes (e.g., everyone receives the same share of the pie), while Proportionality reflects a dependence on one's contribution (e.g., contributions of 1 hour receive 1 unit; contributions of 2 hours receive 2 units). We apply both operationalizations, the original MFT with five foundations and the more recently expanded MFT with six foundations, and find a convergent pattern of evidence in this research.

Prior research has shown that the moral foundations against which people innately evaluate "proper behaviors" predict a host of behavioral outcomes. For instance, individuals who place greater value on the Purity foundation are more hesitant to use vaccines for children (Amin et al., 2017; Hornsey, Harris, & Fielding, 2018; Rossen et al., 2019). Meanwhile, individuals who place value on the Care and Fairness foundations are more likely to donate money to charity (Nilsson, Erlandsson, & Västfjäll, 2016; Winterich, Zhang, & Mittal, 2012). Moreover, the Fairness foundation has been suggested to predict support for punishment in crimes involving sexual aggression (Harper & Harris, 2017). Transgression of different moral foundations has been shown to engender different emotional reactions in observers (Cannon, Schnall, & White, 2011). In all of these and other cases, people intuitively evaluate a behavior or judgment along the relevant moral foundations, coming to a formal assessment of what to do (or not do).

Moral foundations theory offers an important benefit—namely, people's underlying moral intentions can strongly predict attitude-behavior consistency. That is, when individuals rely on a moral foundation for the basis of an attitude, the attitude more strongly predicts behavior (Skitka & Bauman, 2008; Skitka, Bauman, & Sargis, 2005) and is more resistant to

change (Aramovich, Lytle, & Skitka, 2012). This offers an important reason to explore the moral foundations underlying attitudes toward (and behaviors involving) cryptocurrency. Once researchers understand the moral basis for people's attitudes toward cryptocurrency, it offers a stronger basis to predict actual behavior (e.g., cryptocurrency use or investment). To be sure, why attitudes with a moral basis better predict behavior is theoretically unclear. Some research offers the possibility that such attitudes are more stable and internal (Rozin, 1999) while others offer genetic reasons (Brandt & Wetherell, 2012). Either perspective implies that attitudes grounded on a moral basis are also more stable and resistant to change.

One important domain that has been often examined in conjunction with MFT is political orientation. It is well-established that Care and Fairness can be subsumed as "individualizing" foundations, while Loyalty, Authority, and Purity are subsumed as "binding" foundations. Related to political ideology, while both liberals and conservatives place a similar emphasis on the individualizing foundations, conservatives value binding foundations more so than liberals (Day et al., 2014; Graham et al., 2009; Winterich et al., 2012). Thus, given how political beliefs might predict reliance on one foundation or another (or one set of foundations or another), in this research, we further use political ideology as a segmentation basis—determining *who*, depending on their political beliefs and attitudes, are attracted to cryptocurrency.

Political Ideology

Political ideology represents a range of competing philosophies about life and how it should be lived (Jost et al., 2009). Political ideology is also relevant in purchasing and investment contexts, where the individual's political ideology often plays a pivotal role in shaping their brand-related attitudes, opinions, and behaviors (Chan & Ilicic, 2019; Jung et al.,

2017; van Esch et al. 2022; Cui & van Esch 2022; Shewani & Chan 2022; Harnish et al. 2022). This comes about because contemporary consumption is a "primary arena in which political ideology is expressed and constructed" (Crocket & Wallendorf, 2004, p. 511). Part of this may stem from the fact that all people hold *some* sort of political ideology, and ideology can influence behavior outside the voting booth by offering a "lens" through which to see the world, including advertisements and brand communications (Tsai, 2012). As a result, the influence of political ideology on individual attitudes and behaviours has been observed across a wide range of contexts.

There are numerous ways to distinguish between people who hold a conservative ideology from those with a liberal one (Bafumi & Shapiro, 2009; Khan et al., 2013), two of which tend to be most primary and well-established (Jost et al., 2017; Thorisdottir et al., 2007). On social matters, conservativism is related to traditional and historically or socially accepted values and customs. On fiscal matters, conservatism is linked to hierarchy, even if it means economic disparity among individuals within a society. As examples, conservatives are more opposed to homosexuality and abortion as they go against historically or socially accepted practices (social dimension), and they are more opposed to public health care and social welfare as such policy objectives aim to reduce inequality (fiscal dimension). The different lens through which to view the world can explain ideological differences across many domains such as self-control, happiness, and health (Chan, 2019; Clarkson et al., 2015; Napier & Jost, 2008).

As mentioned above, MFT has often been applied to understand why moral judgments vary across the political spectrum, such as in understanding the "culture wars" between political liberals and conservatives in the U.S. (Graham & Haidt, 2007). The prior research has shown that political liberals tend to score higher on Care and Fairness foundations (i.e., individualizing

foundations), while political conservatives instead tend to score higher on Loyalty, Authority, and Purity foundations (i.e., binding foundations) (Kivikangas et al., 2021; Klein et al., 2018; Day et al., 2014; Graham et al., 2009; Winterich et al., 2012). Given that liberals and conservatives value distinct moral foundations, it stands to reason that liberals and conservatives who are drawn to cryptocurrency could also hold distinct moral foundations.

It is also evident in the media and public discourse that there are different attitudes toward cryptocurrency among people of different political ideology—especially among participants of different ideologies within the United States. For example, Republican lawmakers tend to be supportive of cryptocurrency and especially Bitcoin because of its ability to create new jobs, while Democratic lawmakers are also on the whole appreciative of the job growth opportunities that come with crypto yet are concerned with the potential environmental effects of digital asset mining (Hamilton, 2022; Mak, 2022). Some Republican lawmakers have even gone so far to protect cryptocurrency investments in 401(k) accounts (Henney, 2022). There are also similarities in attitudes toward cryptocurrency worldwide, such as the left-leaning Labor government in Australia seeking to regulate crypto more (Markezic & Bacina, 2022), yet federal conservative party leader Polliviere is promoting Bitcoin in Canada (McGregor, 2022) and right-leaning French president Macron seeking to protect the new digit asset class by introducing tax-exempt policies (Zhuang, 2022). Consequently, there does seem to be different attitudes toward cryptocurrency held by members holding diverging political ideologies and the current research seeks to provide the first behavioral scientific observation on this topic.

The Current Research

In this research, we examine the moral foundations that are currently exhibited by people interested in cryptocurrency. Specifically, among people who are interested in buying and using crypto, what are their moral foundations? Are these individuals higher on some foundations and lower on others? In addition, how do people's political orientations affect their attitude toward crypto and how do political orientations interact with different moral foundations in affecting people's interest in crypto? We address these questions in two studies. As an initial exploration, in Study 1, we first analyze the moral foundations expressed in language on social media by scraping a large volume of posts from the crypto community made on Twitter. Next, in Study 2 we adopt a paradigm introduced in Martin et al. (2022) to conduct a survey allowing us to further understand how political ideology interacts with the moral foundations associated with crypto interest. All Twitter data are publicly available via API and survey data are available upon request.

Study 1

Method

Tweet collection and cleaning. As an initial exploration, we examined the moral language used by crypto Twitter when discussing cryptocurrency. We analyzed public tweets posted on Twitter that were related to Bitcoin (i.e., mentioning "Bitcoin," "#btc," or "$btc"). The tweets included only those posted by verified accounts and did not include retweets or replies. Using Twitter's API, we scraped in total N=959,393 tweets matching these criteria which spanned the time period of July 3, 2008 to July 31, 2022. We cleaned tweets using a Python script that removed URLs and punctuation.

Moral-language analysis. Analyzing moral sentiment in natural language such as a large set of tweets allows researchers to gain valuable insights that complement traditional surveys (Hoover et al. 2020). We applied recent natural language processing methods to examine the extent to which crypto tweets reflect each of the five original moral foundations. This method adopts word-embedding algorithms that capture semantic similarity between words by mapping each word onto a high-dimensional space, something that cannot be done with traditional word count measures such as LIWC (Pennebaker et al. 2001). Consequently, word-embeddings allow researchers to numerically represent relationships between words and have increasingly been applied within the literature (Berger et al., 2020; DeFranza et al., 2020).

For intuition in applying this method, consider words "pure," "impure," and "bacteria." While it may be easy for humans to determine that "bacteria" is semantically closer to "impure" than it is to "pure," how can an algorithm determine the semantic closeness and quantify it to be used for analyses? Following the Distributional Hypothesis (Firth, 1957), this method assumes words that frequently co-occur in similar contexts to have more semantic closeness than words that co-occur less frequently. Specifically, in the current research, we applied 200-dimensional word-embeddings developed using the GloVe algorithm in particular (Pennington et al., 2014) that were pre-trained to analyze such semantic relationships on a dataset of approximately two billion tweets. We can then apply these learned representations to measure the semantic distance between focal text (i.e., tweets) and the constructs of interest (i.e., moral foundations like Purity).

In operationalizing the constructs of interest (i.e., each dimension of moral foundation), we used the distributed dictionary representation (DDR) approach. For each moral foundation, the semantic distance of focal text (i.e., tweets) is measured against a dictionary of words that represents the moral foundation (i.e., a dictionary of words similar or dissimilar to "Purity" etc.),

where we applied dictionaries validated in prior research (Garten et al., 2018; Wang & Inbar, 2021). Using the words from each tweet, GloVe word-embeddings provided a 200-dimensional vector representation of the tweet, averaged across the words. Similarly, for each moral foundation dictionary, a 200-dimensional vector represented the moral foundation. To evaluate how closely aligned each tweet was to the moral foundation, we measured the cosine distance between the two vectors. The previously developed dictionaries that we applied corresponded to the original five dimensions of moral foundations (Care, Fairness, Loyalty, Authority, Purity), with further validation details reported in prior work (Garten et al., 2018; Wang & Inbar, 2021); notably, we extend this prior work by using more context-sensitive GloVe embeddings rather than word2vec. Because the Wang and Inbar (2021) dictionaries included two dictionaries for each moral foundation ("virtue" and "vice" dictionaries), after calculating cosine distance, we took the difference of these two for each moral foundation to capture the semantic similarity. For clarity, this is summarized in the equation below:

$$MFSimilarity = Cosine(Tweet, MFVirtueDictionary) - Cosine(Tweet, MFViceDictionary)$$

where Cosine(x1,x2) represents the cosine distance function, Tweet represents the 200-dimensional average GloVe word-embedding associated with the tweet, and MFVirtueDictionary and MFViceDictionary represent 200-dimentional average GloVe word-embeddings associated with the MFT dictionaries applied in Wang and Inbar (2021).

Results and Discussion

To evaluate whether Bitcoin-related tweets overall expressed moral language that was similar or dissimilar to each of the moral foundations, we tested the mean similarity against zero for each moral foundation. A positive average similarity score indicated that tweets expressed moral language that was similar in sematic meaning to the moral foundation, whereas a negative similarity score indicated that tweets expressed moral language that was dissimilar in sematic meaning to the moral foundation. A zero measure indicated no relationship.

In a sample of nearly one million tweets, our findings revealed that tweets expressed moral language that was positively related to the moral foundations of Authority (M=.236, SD=.053, t(959392)=4346, p<.001), Loyalty (M=.157, SD=.038, t(959392)=4051, p<.001), and Purity (M=.181, SD=.040, t(959392)=4432, p<.001). In addition, tweets were overall negatively related to the moral foundations of Care (M=-.212, SD=.055, t(959392)=3799, p<.001) and Fairness (M=-.062, SD=.030, t(959392)=2002, p<.001). See Figure 1 for the graphical representation of the results.

<INSERT FIGURE 1 HERE>

These findings indicate that moral values expressed in language on crypto-Twitter exhibits greater semantic similarity to conservative ideals (i.e., binding foundations of Loyalty, Authority, and Purity) rather than liberal ideals (i.e., individualizing foundations of Care and Fairness).

Study 2

Study 1 illustrated that people involved in the crypto community on Twitter tend to express language reflecting moral foundations more closely associated with conservative versus

liberal ideals. In Study 2, we explored this further by conducting a survey based on the approach taken by Martin et al. (2022) to understand (1) what moral foundations distinguish those who are interested vs. not interested in crypto, and (2) how political ideology interacts with the moral foundations associated with crypto interest. Furthermore, to establish more generalizability, we expanded our focus from Bitcoin in Study 1 to cryptocurrency in general in Study 2.

Methods

Participants. We recruited a total of 500 participants located in the United States through Prolific (preregistration link: https://aspredicted.org/PNP_KJV), of which 487 passed all attention checks and were included in the analysis (297 women, age M=37.47, SD=13.30). The sample size was set similar to that of prior research connecting personality traits to crypto interest that we directly build on (Martin et al. 2022).

Procedures. All participants answered a series of questions probing interest and attitudes toward cryptocurrency. Adapted from Martin et al. (2022), these questions included three items related to interest in investing in cryptocurrency (e.g., "If you were looking to invest, how likely are you to buy cryptocurrency?", 1=unlikely, 7=likely; α=.989) and three items related to attitudes toward cryptocurrency (e.g., "How do you feel about cryptocurrency?", 1=bad, 7=good; α=.980). Participants also completed the MFQ-2 scale (Atari et al., 2022) in order to measure moral foundations. The questions that were used to measure interest in investing in crypto and attitudes toward crypto can be found on Web Appendix. The 36-item MFQ-2 scale extends the previously developed MFQ scale (Graham et al. 2008) by separating the Fairness foundation into Proportionality and Equality foundations. The MFQ-2 instrument included six subscales corresponding to Care (α=.913), Equality (α=.910), Proportionality (α=.835), Loyalty (α=.868),

Authority (α=.903), and Purity (α=.823). Then participants shared their political affiliation by indicating which political party they support (Democratic Party, Republican Party, Libertarian Party, Other, Independent). In addition, participants were asked if they were aware of cryptocurrency, if they are interested in investing in stocks, bonds, or cryptocurrency, and what is their level of experience with using cryptocurrency. Finally, we captured additional individual demographic differences by asking participants to share information about age, gender, education, and income.

Results and Discussion

Moral foundations and crypto interest. Following our preregistration plan, we conducted regression analyses to evaluate the relationship between moral foundations and interest in investing in cryptocurrency. Interest in investing in cryptocurrency was the dependent variable and regressors included demographic controls (age, gender, education, income, and political affiliation) and each moral foundation estimated separately. Our findings indicated that Loyalty (b=.132, se=.049, t(475)=2.69, p=.008), Authority (b=.116, se=.046, t(475)=2.51, p=.013), and Purity (b=.150, se=.047, t(475)=3.17, p=.002) were positively associated with interest in investing in cryptocurrency, while Care (b=-.082, se=.054, t(475)=1.54, p=.125), Equality (b=.038, se=.042, t(475)=.91, p=.363), and Proportionality (b=-.028, se=.055, t(475)=.51, p=.613) did not have a significant relationship. Please see the Appendix for full regression tables and details on the identical pattern of results we observed when analyzing attitudes toward cryptocurrency. A graphical summary of these results is presented within Figure 2A and 2B. Consistent with our findings in Study 1, these results indicated that people interested in crypto held moral foundations that were more closely associated with conservative ideals (i.e.,

binding foundations of Loyalty, Authority, and Purity) than with liberal ideals (i.e., individualizing foundations of Care, Equality, and Proportionality). It should be noted that the effect of individualizing moral foundations that were negative and significant in Study 1 were not significant in Study 2. This difference was likely caused by different sample sizes between the two studies (N=959,393 in Study 1 vs. N=487 in Study 2). It should also be highlighted that despite the difference in sample size, in both studies, the crypto community displayed stronger association with binding moral foundations.

<INSERT FIGURE 2A and 2B HERE>

Differences by political affiliation Within our sample, 49% of participants affiliated with the Democratic Party, 18% with the Republican Party, 24% were independents, 4% Libertarian, and 4% Other. To understand how the moral foundations of cryptocurrency investors differed by political affiliation we conducted follow up analyses including the interaction between political party and each moral foundation in predicting interest in investing in crypto. Focusing on the comparison between people who affiliated with the Democratic Party and the Republican Party, we found that interactions with Proportionality (b=.183, se=.082, t(320)=2.23, p=.027), Loyalty (b=.187, se=.067, t(320)=2.79, p=.006), and Authority (b=.143, se=.068, t(320)=2.13, p=.034) were significant and positive (i.e., these foundations were a more positive predictor of interest in investing in crypto for Democrats than for Republicans) and the interaction with Equality (b=-.108, se=.058, t(320)=1.85, p=.066) was marginal and negative (i.e., the Equality foundation was marginally a more positive predictor of interest in investing in

crypto for Republicans than for Democrats). Interactions with Purity (b=.056, se=.059, t(320)=.95, p=.344) and Care (b=.085, se=.072, t(320)=1.19, p=.236) were not significant.

Overall, the findings can be interpreted as indicating that among people affiliated with the Democratic Party, holding relatively conservative moral foundations (i.e., stronger binding foundations overall) was associated with greater interest in crypto; by contrast this was not the case for people affiliated with the Republican Party. Interestingly, we also observed that different notions of the Fairness foundation studied in prior MFT research (specifically Equality vs. Proportionality) distinguished between Republicans who were interested vs. not interested in crypto. Specifically, among those who affiliated with the Republican Party, people who held stronger Equality and weaker Proportionality foundations were comparatively more likely to be interested in crypto. See Figure 3A and 3B for the graphical representation of these relationships.

<INSERT FIGURE 3A and 3B HERE>

General Discussion

Crypto is a technology that has the potential to house both conservative and liberal dreams. However, in line with viewpoints of Peter Thiel and Marc Andreessen (The Economist, 2022), our findings document convergent evidence indicating that crypto is best understood as "right-wing tech" more closely aligned with conservative moral foundations at the current stage.

This perspective unlocks several novel avenues toward understanding how individual behavior involving crypto technologies may be a function of political ideology. Literature has shown that conservatives are more prone to anthropomorphize (Chan 2020), variety seeking (Fernandes & Mandel 2014), avoid ambiguity (Farmer, Kidwell, & Hardesty 2021), among other cognitive and motivational biases (Jost 2017). These tendencies could help to identify

vulnerabilities to predatory scams and marketing activities that are more predominant within crypto communities than traditionally studied financial decision making contexts. Crypto projects seeking to increase adoption could take advantage of the malleability of preference for individualizing and binding foundations (Napier & Luguri, 2013). Furthermore, our findings that crypto investors hold stronger binding foundations (Loyalty, Authority, and Purity) point to messaging strategies that policymakers can leverage in the design of more effective warnings and risk communications (Kidwell, Farmer, & Hardesty 2013).

Notably, our findings in Study 2 also suggest that crypto could represent a more moderate platform for community-building than traditional political platforms. Specifically, we found that crypto appealed to relatively-conservative Democrats (who valued Loyalty, Authority, and Proportionality) as well as relatively-liberal Republicans (who valued Equality). Further research may characterize political strategies that may cut through left/right tribalism (Rao 2017) by highlighting crypto-regulation related issues appealing to values held by people across the political spectrum.

An interesting and important observation worth noting is that we did not explicitly assess the notion of honesty. But, this is likely worth investigating further, given that one immorality concerning cryptocurrency involves its use for fraudulent transactions and purposes, as evident by the recent case of Sam Bankman-Fried (NBC). This suggests that the concept of honesty (or rather, dishonesty) might be important in exploring who uses cryptocurrency and why. Indeed, we did not measure "honesty" in our study, and "honesty" is not a moral foundation *per se*. Yet, we also note some researchers place "honesty" as part of the Fairness umbrella (Scigala et al., 2023). That is, people who are motivated by honesty can be captured by being motivated by the moral foundation of Fairness. Hence, although we did not measure honesty *per se*, our findings

are consistent with the dishonesty often associated with cryptocurrency usage. We find that cryptocurrency-related posts were more likely to express conservative moral foundations (Authority, Purity, Loyalty) rather than liberal moral foundations (Fairness, Care). If honesty can be subsumed under the moral foundation of Fairness, though, then our findings are consistent with the association between cryptocurrency and dishonesty.

As crypto technologies increasingly have a growing impact on payments, investments, and financial decision making behavior, it is increasingly important to understand and preempt the risks and vulnerabilities people may encounter within this new domain. This work seeks to provide a perspective through moral foundations and political ideology that we hope will spur further research in this effort.

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Fig. 1. The extent to which bitcoin tweets (N = 959,393) represented each dimension of moral foundation measured using semantic similarity score. Y-axis displays average semantic similarity with each moral foundation.

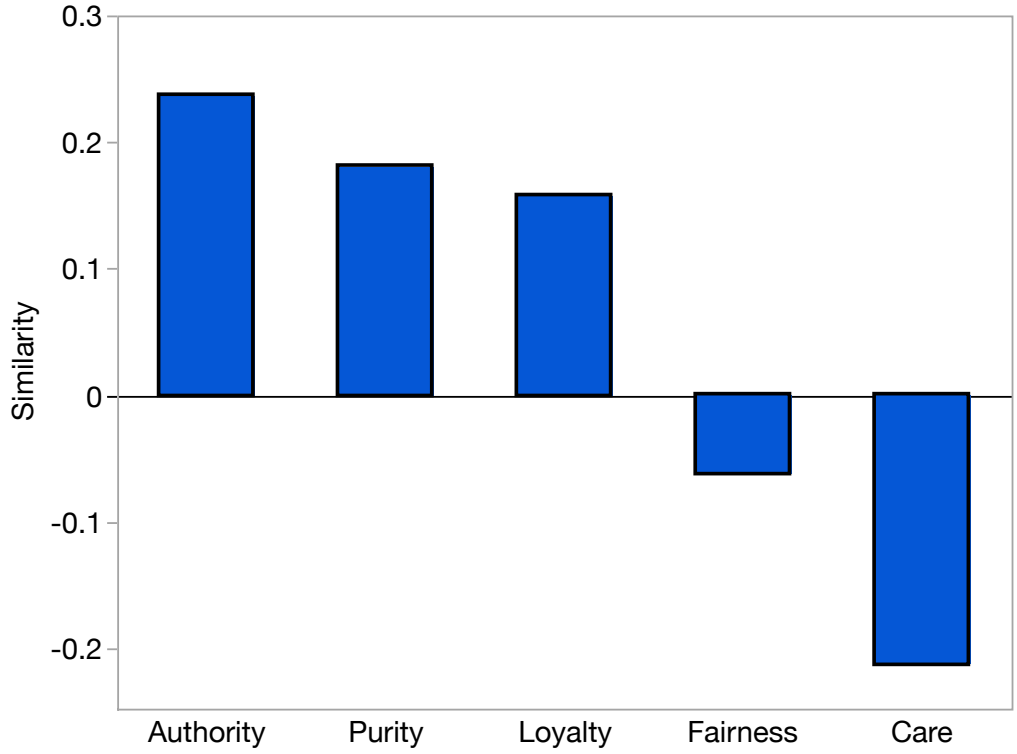

Fig. 2A. Relationships between moral foundations and interest in cryptocurrency investment. Y-axis displays parameter estimates from regression analysis with demographic controls. Positive parameters reflect greater interest in cryptocurrency investment. Blue bars indicate significant relationship.

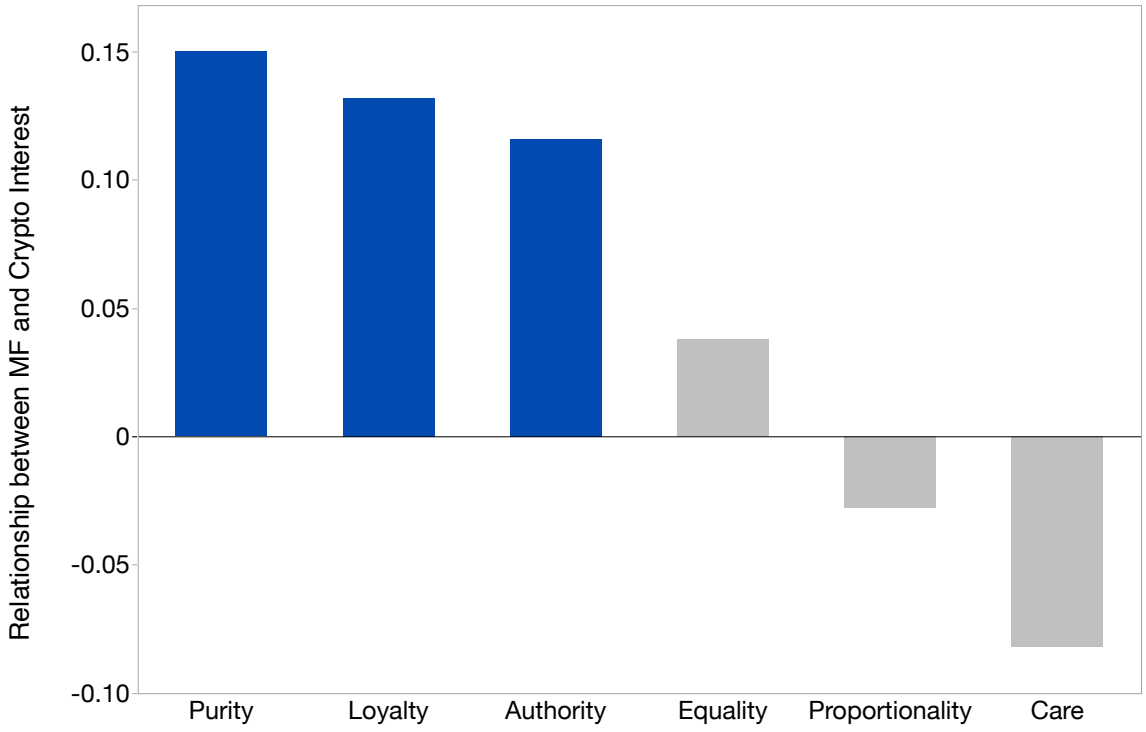

Fig. 2B. Relationships between moral foundations and attitudes toward cryptocurrency. Y-axis displays parameter estimates from regression analysis with demographic controls. Positive parameters reflect positive relationship. Blue bars indicate significance.

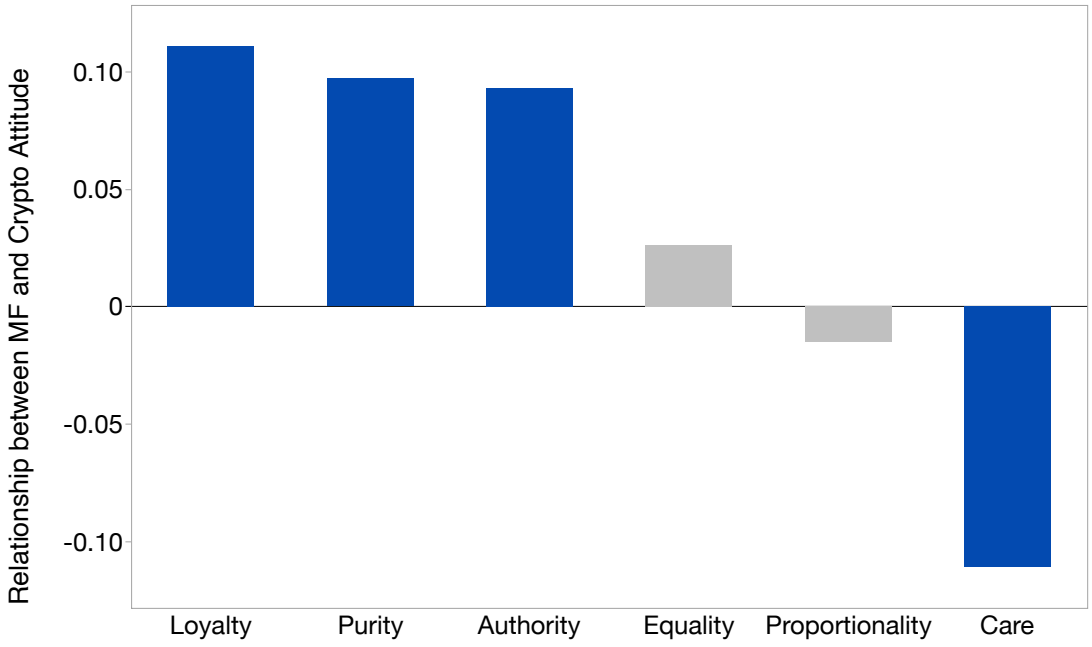

Fig. 3A. Relationship between moral foundations and crypto interest, by political affiliation. X-axis displays average across individualizing foundations (dashed line) and binding foundations (solid line), Y-axis displays crypto interest.

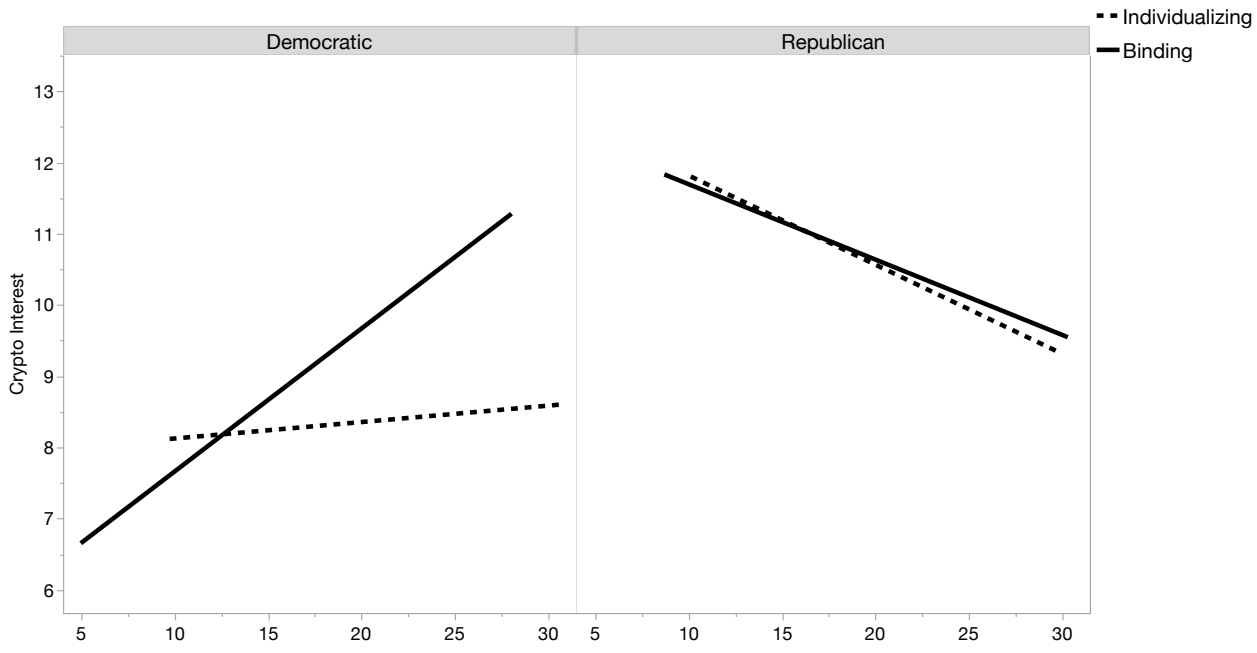

Fig. 3B. Different notions of Fairness (i.e., Equality vs. Proportionality) distinguished between Republicans and Democrats who were and were not interested in crypto. X-axis displays Proportionality foundation (dashed line) and Equality foundation (solid line), Y-axis displays crypto interest.