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The Impact of Loss Aversion on People's Behavior in Different Markets

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Abstract: Loss aversion is an important psychological phenomenon. Adding loss aversion to the category of behavioral economics can well explain many phenomena that cannot be explained by general models. This paper reviews some relevant studies showing the application of loss aversion in the stock markets, real estate markets and COVID-19, and finds that loss aversion does influence people's decisions and the market as a whole. In the stock market, the combination of narrow framing and loss aversion leads to a shorter valuation period and investors' reluctance to sell the stocks. Loss aversion in the real estate market will drive house sellers to set a higher price, and investors with more experience are even more loss aversion than inexperienced investors. In the context of COVID-19, emergency orders can improve their profits, and the time of blockade can be extended under the loss framing. In general, loss aversion makes people more reluctant to give up what they have, leading to higher trading prices and other problems. Thus, this paper corroborates that loss aversion has more explanatory power than general economic models in some aspects. Further analysis is needed as to how loss aversion can be used to predict and modify people's behavior.

Keywords: loss aversion, stock market, real estate market, COVID-19

1. Introduction

Loss aversion is an important bias which means that when making decisions, people face more pain in terms of loss than they do in terms of gaining an equivalent amount of pleasure [1]. In most cases, loss aversion invalidates traditional economic theory and adversely affects markets, drawing more attention to it. Only by understanding loss aversion can people know how to mitigate, or even eliminate it.

The studies of people's different feelings between gains and losses started early on. In research of prospect theory, loss aversion played a central role [1]. By absorbing the latest achievements in cognitive psychology and other fields, Kahneman and Tversky proposed a value function to explain numerous economic phenomena on the basis of prospect theory with the construction of utility function as well as the organic combination of psychology and economics [1]. After Kahneman and Tversky's groundbreaking study, studies gave a deeper insight into loss aversion and risk decisions [2].

Subsequently, there has been a gradual increase in research on loss aversion in various fields. An example is the stock market. Investors' loss-averse behavior has been found in the stock market [3].

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Thaler et al. pointed out that the external environment also affects investors' degree of loss aversion [4]. Barberis et al. combined loss aversion with narrow framing to explain the phenomena of stock returns [5]. Another field is the real estate market. Genesove and Mayer showed how loss aversion affected house sellers' behavior in Boston [6]. Study also found the relationship between loss aversion and the experience of investors [7]. It seems that loss aversion is attracting more research attention in various fields.

Loss aversion has been proven to be useful in understanding some field data and explaining some confusing phenomena. Although loss aversion has been widely recognized and studied, most current research still focuses on empirical studies or experiments to explain people's behavior. Little research points out how to eliminate people's loss aversion in a particular area (e.g., Benartzi and Thaler) [3]. It is necessary not only to explain people's behavior but also to give them some advice, helping them make more rational decisions.

This paper mainly shows three applications of loss aversion and then has a discussion focus on the practicability of theory using loss aversion. Section 2 to 4 shows how loss aversion affects stock market, real estate market and suppliers' sourcing strategies in the context of the out breaking COVID-19. Section 5 will discuss the limitations of loss aversion as well as the value of studying it.

2. Application 1: Loss Aversion in the Stock Market

2.1. Narrow Framing and Broad Framing

Paul Samuelson made a coin flip bet with a colleague, the college would get $200 if he won and would lose only $100 if he lose [8]. The college refused the bet but said that he would participate in the bet if he can play it 100 times. Samuelson's college's reason for refusing a single bet was loss aversion. By calculating the mathematical expectation of the amount of money obtained in the bet, it is clear that the expectation is $50 when making a single bet and $5,000 when making 100 bets. This indicates that it is cost-effective for this colleague to make either 1 bet or 100 bets. Therefore, the irrational behavior of this college is inconsistent with the expected utility theory, which constructs a rational person's decision model using an expected utility function. Now the agreement is that the expected utility theory does not explain the individual choice adequately, this forces us to take some irrational human psychological activities, such as loss aversion, into account. However, loss aversion alone cannot explain why the college would accept a series of bets.

Another concept is called narrow framing, which refers to treating each decision as if it were our only decision and considering each decision in isolation. This concept was proposed by Kahneman and Lovallo in 1993 [9]. The concept corresponding to narrow framing is called broad framing, which refers to integrated, continuous decision-making thinking. Simonson used a snack experiment to demonstrate that if the choices are separated by broad framing, people will choose more diverse combinations [10]. He let students choose one of six snacks. One group of students was required to choose three snacks in the first week and received the snacks until the appointed time. The other students were asked to choose one snack every week. The experiment lasted three weeks. 64% of the students in the first group selected another type of snack for each week, while this number was merely 9% in the second group, which indicates that the people prefer to choose more kinds of things when a broad framing is given, and the opposite is true under a narrow framing. An example of narrow framing in the field is the New York cab drivers. Camerer et al. were curious about how New York City cab drivers allocated their labor time [11]. These drivers paid a fixed daily rental fee for their cabs every day, and then they could drive their cabs for 12 hours and keep all the revenue they earn. Considering that driving 12 hours a day was not an easy job, the drivers needed to decide how long they drive every day. According to the intertemporal substitution hypothesis, cab drivers would work longer on busy days, thus increasing their revenue. The study, however, indicates that cab drivers

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measured their revenue one day at a time: they have a target for daily income, and they stop working after reaching the target. Therefore, they would quit earlier on busy days [11]. Now it is clear that narrow framing does affect people's behavior. Narrow framing combined with loss-aversion increases people's loss aversion, while broad framing combined with loss aversion reduces people's pain. Thaler pointed out that people are more reluctant to take risks when they consider one bet alone, and their risk tolerance will increase when they look at a series of bets as a whole, which just goes to show that a broad framing can reduce people's loss aversion [12].

2.2. The Equity Premium Puzzle

The equity premium refers to the phenomenon that the return on equity is greater than the return on risk-free assets (e.g. treasury bills). Mehra and Prescott used a model to quantify the optimal risk premium [13]. The equity premium is very high in the United States and has existed for a long period, Mehra and Prescott indicated that a standard neoclassical general equilibrium model is hard to explain such a large premium unless the unrealistically high level of risk aversion of individuals is taken into account [13].

To explain the puzzle, Benartzi and Thaler pointed out that the length of the evaluation period and loss aversion lead to the equity premium [3]. The frequency of evaluations is not fixed but can be altered. They used data simulations to verify how long a valuation period maximizes the utility of prospect theory in the case of stock and bond selection. They point out that stocks are increasingly appealing with the extension of the evaluation period. They also note that the degree of people's loss aversion depends on the length of their evaluation period. This issue was then analyzed and addressed that the comparison asset could be determined by the real returns on stocks and those on five-year bonds. When the evaluation period rises from 2 years to 20 years, the equity premium decreases from 4.65% to 1.4%, which means that the shorter the length of the valuation period, the higher the implied equity premium [3]. An investor's frequent look at investment results is a narrow framing, this narrow framing triggers a loss aversion to a severe degree. Since the investors evaluate the performance of their portfolios cautiously and frequently, it can explain why the equity premium is so large, or why is anyone willing to hold bonds. It has also been verified whether experienced institutional investors also exhibit myopic loss aversion. Benartzi and Thaler studied the economic factors of organizations in pension funds, foundations, as well as university endowments, finding that their behavior can still be explained by the combination of narrow framing and loss aversion [3]. The numerous economic phenomena consistent with loss aversion behavior certainly enhance the ability of myopic loss aversion to explain equity premium.

2.3. The Individual Stock Accounting and the Portfolio Accounting

According to the prospect theory and Benartzi and Thaler's study [3], the combination of loss aversion and the stock market gets more attention. The returns of an individual stock have a high mean in the time series, which are excessively volatile. Barberis and Huang tried to refine the investor preferences model by incorporating the idea of loss aversion and narrow framing into it, thus improving people's understanding of stock returns [5].

They considered two kinds of economies under narrow framing. The first framing is "individual stock accounting". From the gain and loss of the individual stocks investors hold, they can get direct utility. The degree of loss aversion depends on the prior performance of the stock. The second framing is "portfolio accounting", in which investors get direct utility from the gain and loss in the overall portfolio. That means in this situation investors are loss averse only over portfolio fluctuations. Obviously, the second framing is broader than the first one. When "individual stock accounting" broadens to "portfolio stock accounting", there were dramatic changes in the equilibrium behavior of

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individual stock returns: they became less volatile and the mean value falls, and thus the correlation of the stocks was also stronger [5].

Barberis and Huang point out that in the first framing, if a stock performs brightly, investors derive utility from it and increase their confidence in this stock, therefore, they stop worrying too much about the stock's future losses, leading to a lower discount rate [5]. Conversely, if a stock underperforms, investors show distress and are sensitive to the possibility of further declines in that stock. Such behavior leads to a higher discount rate. Growth stocks are usually stocks that have performed well in the past and have a higher price-dividend ratio. Investors perceive them as less risky, thus only demanding a lower average return. Value stocks have a low price-dividend ratio and bring less income to investors. They perceive more risk in holding them and demand higher average returns because of loss aversion.

They derived conditions controlling for equilibrium prices in economies with various types of investors and analyzed equilibrium stock returns through simulation in the two framings, concluding with the conclusions above [5].

2.4. The Inspiration to Investors

More attention is paid to how framing and loss aversion affects the behavior of investors based on the study of Benartzi and Thaler [3]. Although it is not an easy task to include loss aversion in the model and perform quantitative analysis, people can still benefit from this innovative attempt. The combination of framing and loss aversion is especially important to inexperienced investors. Benartzi and Thaler indicate that in reality, each investor's situation is different and therefore the evaluation period that applies to them varies, but for most investors, one year is a more reasonable evaluation period [3]. It seems that individual investor is recommended to use broad framing rather than narrow framing, which means they should not check their investment result too often. Broad framing saves time, eases pain, and improves the outcome and quality of decisions. It can also maintain the stock market in a relatively stable state.

3. Application 2: Loss Aversion in the Real Estate Market

3.1. Loss Aversion and the Price

Housing markets exhibit several confusing features. Properties can be sold quickly for more than the asking prices in a boom. However, sellers will set an asking price higher than the market price and properties will be more difficult to sell in a bust. Eventually, many sellers withdraw their properties rather than sell them. According to Genesove and Mayer, sales volume in Cleveland can fluctuate by more than 50% in a real estate cycle, which indicates that the seller’s reservation prices are not as flexible as the buyer’s offers [6]. This pattern is especially confusing because most of the transactions take place among local residents, and people mostly move within the same city, so most of the sellers are also buyers in that same market.

Aimed at this phenomenon, Genesove and Mayer used the data of individual properties in the Condominium market of Boston from 1990-1997 to conduct a regression analysis of the list price and the selling price [6]. They also found the effect of loss aversion on the hazard rate of sale (The hazard rate of sale refers to the probability that a property listed for sale will sell over a period of time). They point out that loss aversion affects seller behavior in the residential real estate market. Sellers who are facing losses will set higher asking prices, therefore reducing the hazard rate of sales. In a bust, the market price of many properties can be lower than the price at which the seller purchased the property, so loss aversion leads these sellers to set an asking price which is higher than the price they would set without loss aversion. Therefore, these properties will be more difficult to sell and will ultimately sell for a higher transaction price [6].

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After Genesove and Mayer's influential paper, more scholars began to focus on the impact of loss aversion on the real estate market. Bokhari and Geltner used data on commercial property sales in the USA from 2001-2009 to explore the role loss aversion played in asking prices and realized transaction prices [7]. They find that loss aversion can explain some behaviors of investors in the real estate market.

3.2. Loss Aversion and Investors' Experience

The most interesting part of the study by Bokhari and Geltner is their analysis of loss aversion and investors' experience. As mainstream views and commonly held beliefs, Genesove and Mayer's study found that owner-occupiers of properties show more loss aversion than professional investors [6]. Contrary to popular perception, however, Bokhari and Geltner examined the degree of loss aversion exhibited by investors with different experiences in trading and found that more experienced investors tended to exhibit a higher degree of loss aversion [7].

They divided the investors into the "more experienced investors" group (Involved in over 100 transactions) and the "less experienced investors" group (Involved in less than 100 transactions) and then calculated the equality of coefficients in both groups [7]. The coefficients were 0.46 and 0.35 respectively, which significantly showed that more experienced investors and larger "professional" institutions are more prone to loss aversion than smaller private ones [7]. An explanation for this phenomenon is that the experienced investors' knowledge gives them greater self-confidence, inspiring them to raise the asking price. Two significant things in the real estate market are clear now. First, loss aversion will drive sellers to set a higher price, therefore the properties will receive a higher transaction price. Second, more experience does not lead to less loss aversion. On contrary, more experienced investors exhibit at least as much loss aversion as less-experienced investors.

These things indicate that government regulation is essential in the real estate market. If the government only relies on "the invisible hand", housing prices will fluctuate dramatically with the economic cycle. A government policy on house prices based on national conditions will stabilize house prices at normal levels and shorten the time that properties remain for sale. Moreover, sellers should not rely too much on the so-called real estate agents, they may show a higher degree of loss aversion than laymen.

4. Application 3: Loss Aversion in the Coronavirus Pandemic

4.1. Loss Aversion in the Emergency Procurement

There is no doubt that COVID-19 is a huge shock to the world and hugely impacts the global economy. As an important bias, loss aversion can profoundly impact people's behavior during COVID-19.

For example, one impact of the pandemic was supply chain shortages. Huang, Li, and Liu studied the emergency procurement strategies of companies under the impact of COVID-19 [14]. The newsvendor model plays an important role in operations management. The classical newsvendor model is of moderate risk. However, the fact is that many newsvendors are risk-averse. Huang et al. instead utilized prospect theory to model loss-averse newsvendors. The prospect theory reveals that the larger the loss aversion coefficient λ is, the greater the aversion to loss will be [1]. Huang et. al uses e to denote the price of emergency orders. Under the impact of COVID-19, newsvendors often need to place emergency procurements to meet the sudden increase in demand. p denotes the selling price. According to their proof, when $\lambda = 1$ as well as $e = p$, the classical newsvendor model becomes a model with emergency procurements and loss aversion [14].

They then conducted a series of static comparative analyses of loss aversion coefficients and emergency order prices. They noted that as λ increased, the number of orders decreased. In addition,

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as the emergency order price e increases, the number of orders increases but the revenue decreases. The outbreak of COVID-19 creates uncertainty for emergency procurement. During a pandemic, the supply chain may be disrupted, thus some of the emergency procurement cannot be completed. Therefore, Huang et al. added a stochastic parameter Z to further model the newsvendor in the context of uncertainty in emergency procurement, i.e., under the background of the pandemic [14].

This model may shed some light on firms. Due to loss aversion, the order quantity is generally smaller than the optimal quantity, so the revenue is reduced. At this point, the firms with emergency orders will have higher revenue than the firms without emergency order opportunities. Thus, the opportunity to have emergency orders actually increases the profitability of firms [14]. During the pandemic, the number and frequency of emergency purchases increase significantly when medical supplies are in short supply. According to Rossolov et al., up to 88.0% of end consumers have increased their purchases of emergency supplies and the frequency of shopping decreased from an average of 7 days before COVID-19 to 5 days when the first wave of the COVID-19 pandemic came [15]. The study of Huang et. al indicates that emergency orders are actually a profitable option for firms in special times when they can hedge against purchasing risk [14].

4.2. Loss Framing and Gain Framing

People's decisions can be greatly influenced by loss framing and gain framing, especially when unexpected health events occur. Tversky and Kahneman introduce an example known as the “Asian disease problem” [16]. An Asian disease will kill 600 people, and two programs have been proposed. The first program will save 200 and only 200 people for sure. The second program has a one-third probability of saving 600 people but a two-thirds probability of not saving anyone.

The majority of the respondents choose the first program, which means they prefer certain options. Then the programs are framed differently without changing the consequence: the first program will kill 400 and only 400 people for sure. The second program has a one-third probability that nobody will die while a two-thirds probability that all the people will die.

Under this framing, however, a large majority of people choose the second program, which means they want to gamble when facing a sure loss. This example indicates that people are more willing to take a gamble and a bigger risk when the outcome is negative while choosing certain things and are risk-averse when the outcome is positive.

Bavel et al. found that with the aggravation of negative emotions, individuals may rely more on negative information about COVID-19 than positive information for decision-making [17]. This study reveals that using loss framing, which claims that certain behaviors cause people to lose their lives, may lead to loss aversion and cause people to engage in behaviors that decision-makers want to prevent.

Rothman and Salovey found that the effectiveness of framing depends on the certainty of the outcome [18]. They noted that gain framing is more effective in the case of certainty, while loss framing is more effective in the case of uncertainty. In the context of COVID-19, things are more uncertain. For example, the uncertainty of a blockade may lead people to think in terms of loss framing. According to the results of the mature study, the conclusion seems that gain framing will lead to a tendency to shorten the blockade, while loss framing (life losses) will lead to a tendency to lengthen the blockade. It seems that policymakers can nudge people's behavior by changing the frame. However, Sanders et al. point out that this is not the case [19].

In their experiment, 500 participants were randomly distributed into two groups according to two expressions. The loss framing expression says if there is no well-managed extension to the lockdown, 100,000 people will die, while the gain framing says if there is a well-managed extension to the lockdown, 100,000 people will be saved. They were then asked to judge when society should be open up and to judge their own compliance with the government’s guidelines. Surprisingly, the linear

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regression results show that loss aversion does not have any significant effect on the results. This indicates that people's preference for blockades or their willingness to comply with public guidelines cannot be affected by loss framing. One possible explanation for this is that the subjects learned about the actual effects of the blockade in advance via news and other sources, therefore they were no longer influenced by neither the gain framing nor the loss framing.

5. Discussion

There are at least two points of loss aversion needed further discussion. First, it is not easy to measure human psychological activity because it is unlikely that everyone has exactly the same level of aversion to loss. Not only that, but things will be confusing when the purchase is commercial, i.e., when the trader buys for resale rather than for his or her own use. The majority view should be that people are less loss averse when purchases and sales are commercial, and as is discussed in the second application of this paper, the results obtained by some scholars through empirical studies do not match the usual perceptions. Thus, it does not seem to be able to elucidate which group of people will exhibit loss aversion to what degree. Although difficult, this is exactly what studies need to address urgently. Second, in most of the studies, loss aversion is more like a psychological mechanism to explain people's behavior and a complement to traditional economic theory. Loss aversion does not have, or at least hardly has, a strong operationalization. Loss aversion can be mitigated to some extent by changing the framing as mentioned in application 1, but otherwise, there is no good way to eliminate people's loss aversion. Most of the current studies explain people's behavior through loss aversion, while few propose ways to eliminate this bias.

However, the limitations of loss aversion do not mean that it is not an area worth studying. When testing a theory, the vital thing is how well it can correctly predict a certain event and explain the reasons behind it. Taking loss aversion into account does make the model more difficult to handle, but many of the studies mentioned in this paper demonstrate that this can be done. Models that take loss aversion into account tend to have only one or two more parameters than a general economics model, and when these parameters take on specific values, the behavioral model is reduced to a general model. Therefore, these models corrected for loss aversion can be widely used as long as the degree of people's loss aversion can be predicted relatively accurately. In the actual analysis, these more complex models will sometimes be more accurate than the general theory. According to the three applications in this paper, loss aversion describes reality more accurately than the general utility function, thus providing a solution when the general model fails.

6. Conclusion

This paper investigates the application of loss aversion in three domains and finds that the mechanism of action of loss aversion is quite similar: compared with gains, most people are more sensitive to the equivalent amount of losses. Specifically, this paper analyzes and reviews people's behavior in the stock market, the real estate market and the sourcing strategies of suppliers in the context of COVID-19, and draws the following conclusions. In the stock market, this paper argues that a narrow framing will increase people's loss aversion, people's shorter valuation period of stocks leads to their reluctance to sell loss-making stocks. The suggestion is to use broad framing, which means not checking investment results too often. Loss aversion in the real estate market will drive sellers to set a higher price. Therefore, the properties will spend a longer time on the market. Furthermore, investors with more experience are still loss-averse, they even display more loss aversion than inexperienced investors. The recommendation is to strengthen government intervention and regulation to maintain the relative stability of housing prices. In the context of COVID-19, firms' order quantity is less than the optimal order quantity because of loss aversion. For loss-averse firms,

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emergency orders during an outbreak can improve their profits. Furthermore, when things are uncertain, people prefer to think in terms of loss framing. Therefore, the time of blockade can be extended by using loss framing after the outbreak of COVID-19. However, it seems that the framing is no longer useful until people can fully and accurately understand the relevant information. This paper combines narrow framing with loss aversion, and also shows some cases that are contrary to common sense, such as the confusing relationship between the extent of loss aversion and investors' experience, as well as the case when loss framing fails to work. These points may provide new ideas for subsequent researchers and may lead people to re-examine loss aversion from a different perspective. However, as for why more experienced investors show a more serious extent of loss aversion, and why loss framing failed to trigger loss aversion sometimes remains to be discovered. The ideas mentioned in this paper are only a reasonable speculation and have not been rigorously tested and experimentally confirmed. Hopefully, subsequent researchers can provide definitive answers to these two questions through more rigorous testing.

References

[1] *Kahneman, D., & Tversky, A.: Prospect Theory: an analysis of decision under risk. Econometrica, 47(2), 263-292 (1979).*

[2] *Tversky, A., & Kahneman, D.: Loss aversion in riskless choice: A reference-dependent model. The quarterly journal of economics, 106(4), 1039-1061 (1991).*

[3] *Benartzi, S., & Thaler, R. H.: Myopic loss aversion and the equity premium puzzle. The quarterly journal of economics, 110(1), 73-92. (1995).*

[4] *Thaler, R. H., Tversky, A., Kahneman, D., & Schwartz, A.: The effect of myopia and loss aversion on risk taking: An experimental test. The quarterly journal of economics, 112(2), 647-661 (1997).*

[5] *Barberis, N., & Huang, M.: Mental accounting, loss aversion, and individual stock returns. The journal of finance, 56(4), 1247-1292 (2001).*

[6] *Genesove, D., & Mayer, C.: Loss aversion and seller behavior: Evidence from the housing market. The quarterly journal of economics, 116(4), 1233-1260. (2001).*

[7] *Bokhari, S., & Geltner, D.: Loss aversion and anchoring in commercial real estate pricing: Empirical evidence and price index implications. Real estate economics, 39(4), 635-670 (2011).*

[8] *Samuelson, P.: Risk and uncertainty: A fallacy of large numbers. Scientia, 57(98), 108 (1963).*

[9] *Kahneman, D., & Lovallo, D.: Timid choices and bold forecasts: A cognitive perspective on risk taking. Management science, 39(1), 17-31 (1993).*

[10] *Simonson, I.: The effect of purchase quantity and timing on variety-seeking behavior. Journal of marketing research, 27(2), 150-162 (1990).*

[11] *Camerer, C., Babcock, L., Loewenstein, G., & Thaler, R.: Labor supply of New York City cabdrivers: One day at a time. The quarterly journal of economics, 112(2), 407-441 (1997).*

[12] *Thaler, R. H.: Mental accounting matters. Journal of behavioral decision making, 12(3), 183-206 (1999).*

[13] *Mehra, R., & Prescott, E. C.: The equity premium: A puzzle. Journal of monetary economics, 15(2), 145-161 (1985).*

[14] *Huang, H., Li, X., & Liu, S.: Loss aversion order strategy in emergency procurement during the COVID-19 pandemic. Sustainability, 14(15), 9119 (2022).*

[15] *Rossolov, A., Kuzkin, O., & Rossolova, H.: Emergency supplies purchase patterns during COVID-19 outbreak in the developing economy: frequency and stockpiling drivers' assessment. Journal of humanitarian logistics and supply chain management, 12(1), 106-128 (2021).*

[16] *Tversky, A., & Kahneman, D.: The framing of decisions and the psychology of choice. In Behavioral decision making, pp. 25-41. Springer, Boston MA, USA (1985).*

[17] *Bavel, J. J. V., Baicker, K., Boggio, P. S., et al.: Using social and behavioural science to support COVID-19 pandemic response. Nature human behaviour, 4(5), 460-471 (2020).*

[18] *Rothman, A. J., & Salovey, P.: Shaping perceptions to motivate healthy behavior: the role of message framing. Psychological bulletin, 121(1), 3 (1997).*

[19] *Sanders, M., Stockdale, E., Hume, S., & John, P.: Loss aversion fails to replicate in the coronavirus pandemic: Evidence from an online experiment. Economics letters, 199, 109433 (2021).*