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**Articles**

# Drawing the line between normal and problematic trading: a qualitative study

*Guyonne Rogier [1], Martina Cellie [2], Patrizia Velotti [3]**

## Abstract

*Objective:* For some individuals, problematic trading behaviors lead to relevant negative consequences. The need to identify the line between normal and pathological is plagued by epistemological issues that may overpatologize trading as well as blind clinicians to specificities of the clinical condition. This study aims to use a qualitative approach to partially overcome epistemological issues and to identify key features of problematic trading.

*Method:* We developed the Experiences of Trading Interview (ETI) that was administered to a sample of 29 individuals engaging in cryptocurrencies trading. The content of the questions as well as the structure of the ETI were created to investigate both gambling-like and trading-specific problems. The ETI was structured in sections exploring 1) the story of trading activity, 2) problems emerging after significant losses (e.g., tilt, chasing), 3) problems emerging after significant gains and 4) trading-related harms. The transcripts of the interviews were analyzed through thematic cluster analyses performed with the Tlab software.

*Results:* Problematic trading is characterized by lack of control consequent to disruption in emotion regulation processes following significant loses or profits. Other problematic features were related to excessive pervasiveness of the activity and cognitive salience. Some features are similar to those described by gambling or addiction literature whereas others are more specific to trading.

*Conclusions:* Models of gambling and behavioral addictions help identifying some aspects of problematic trading. However, this phenomenon has specific features that should be better investigated. Qualitative approach appears to be a powerful tool to reduce epistemological bias in the study of potential new behavioral addictions.

[1] Saint Camillus International University of Health Sciences, Rome, Italy

[2] Department of Educational Sciences, University of Genoa, Genoa, Italy

[3] Department of Dynamic and Clinical Psychology, and Health Studies, Sapienza University of Rome, Rome, Italy

E-mail corresponding author: patrizia.velotti@uniroma1.it

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## 1. Introduction

The field of research focused on behavioral addictions has received increased attention since the introduction of gambling disorder in the category of addictions not related to substance by the revised version of the fourth edition of the Diagnostic and Statistical Manual for Psychiatric Disorders (American Psychiatric Association, 2013). Beyond gambling, other behaviors such as gaming, internet and social media use, exercise and pornography consumption have been candidates for inclusion in the broader nosographic category of behavioral addictions (Berczik et al., 2012; Duffy et al., 2016; Kuss, 2013; Weinstein & Lejoyeux., 2010; Zendle & Bowden-Jones, 2019). However, according to some authors, the burgeoning of these proposals results from a general trend that may overpathologize everyday life behaviors (Billieux et al., 2015; Voros, 2009). Importantly, this debate regarding where placing the line between normal and pathological partially overlaps with another question regarding the utility of the behavioral addiction model. Indeed, recognizing a behavior as pathological does not automatically means that this should be understood as an addiction.

The question of which conceptual and empirical criteria should be adopted to consider a behavior as addictive is still debated. In this regard, authors often argue that, to be recognized as a behavioral addiction, the condition should be associated with clinical relevance (i.e., functional impairment) and characterized by the core psychological and neurobiological processes observed in other addictions (Brand et al., 2023; Griffiths, 2022). Also, some authors have stressed that the condition should also be understood with the notions provided by the most influential model of addictions (Brand et al., 2023). Moreover, the scientific community should also test the explanatory potential of other competitive models such as those employed to describe obsessive-compulsive disorder (Brand & Potenza, 2023). From this perspective, developing measures of clinical conditions that are theoretically biased towards the addiction model would increase the risk of self-confirmatory bias consisting in obtaining data supporting the *a priori* theoretical position of the researcher (Billieux et al., 2015). For instance, the association between a measure of dance addiction developed according to the DSM criteria for addiction (i.e., including loss of control over the behavior) and other variables considered core features of addiction (e.g., impulsivity) are likely to be conflated. Conversely, some associations between measures of dance addiction and other potentially relevant variables (e.g., pathological attention seeking) may instead be underestimated.

In the current contribution we start from the idea that a potential strategy to address these epistemological problems consists in adopting a qualitative method of investigation of potentially new behavioral addictions (Dixon et al., 2018). Then, we test the utility of this position by applying this method to a specific behavior that is, financial trading. Indeed, we

believe that literature may benefit from an exploratory perspective instead of prematurely propose conceptual models and/or instruments to evaluate problematic behaviors.

The first advantage of an exploratory approach using interviews consists of the possibility to observe unexpected results (Dixon et al., 2018). For instance, a researcher interested in problematic gambling behaviors would have found that it is not only characterized by the symptoms observable in substance use disorders, but that chasing is a specific mechanism of this condition. In other words, the material that emerges from interviews allows to develop models that are tailored to the specificities of the investigated behavior. The second advantage of a qualitative approach consists in offering some answers to the problem of the delimitation between excessive passion and pathological involvement. Indeed, some authors stressed that a condition for considering a behavior as addictive is the identification of functional impairment and/or harm (Brand et al., 2023). Regarding this point, it should be noted that this criterion is not the prerogative of behavioral addictions but is considered in almost all definitions of mental disorders (Stein et al., 2021). However, defining functional impairment and harm is delicate as no absolute rules exist to decide when a lot of time is too much time or when losing money becomes losing *too much* money. Indeed, the way negative consequences associated with a behavior are experienced as causing harm or functional impairment is quite subjective. In other words, to understand the pathological potential of an excessive behavior, psychologists should examine the subjective representations of the individual regarding this behavior and its consequences. From this perspective, adopting a qualitative approach that examines the representations may help to identify the variables that differentiate between normal and pathological.

It is also important to acknowledge the risk of overlooking the utility of previous conceptual models when investigating new conditions. Instead, the models conceptualizing addictions, gambling and other psychopathological conditions such as obsessive-compulsive disorder may be necessary to guide empirical investigation. Despite being entirely atheoretical would be counter-productive, existing models should be used with a critical approach. The researchers should be able to change their conceptual lens with flexibility as well as to use methodological approaches that allow for the emergence of material not framed within these models.

### 1.1 The case of problematic trading

Financial trading is aimed at generating profits from changes in asset prices by buying and selling financial instruments like stocks, bonds, currencies, commodities, and derivatives in different markets. Our decision to investigate financial trading is based on several reasons. First, the debate regarding the differentiation between normal and pathological fits well with the case of financial trading. Indeed, this activity is not considered pathological *per se* as some traders benefit

from this activity (Ryu, 2012). However, some anecdotal evidence documented the potential clinical relevance of the dark side of trading. For instance, past contributions reported high levels of suicidality among investors, that seem to increase as the economic conditions worsen (Johnson et al., 2023; Kim et al., 2022; McInerney et al., 2013).

Then, despite trading having long been an activity only for professionals, more recently, an increasing number of non-professionals engage in this behavior. In particular, the increasing popularity of cryptocurrencies contributed to democratizing the access to the trading activity (CoinMarketCap, 2022). Lastly, we observed that the conceptualization of this behavior may be impacted by the problems detailed above. In particular, parallels have been drawn between trading and gambling (for a review of theoretical issues regarding problematic trading see Loscalzo et al., 2025). For instance, researchers adapted instruments used to measure gambling disorder to trading and investigated the link between gambling behaviors and involvement in trading activities (Coloma-Carmona et al., 2025a; 2025b; Son & Jeong, 2023; Youn et al., 2016). Although the understanding of trading may be excessively shaped by the gambling model, other perspectives have been adopted. Of note, economists examined the psychological and situational conditions that associate with high frequency trading, high volume traded and poor trading performance. In that way, some identified the role of some cognitive biases such as overconfidence and herding. Importantly, researchers from this field vary in the operationalization of problematic trading with some measuring trading frequency, others trading volume and others losses (See Loscalzo et al., 2025).

To the best of our knowledge, at least two previous valuable qualitative studies already focused on the topic (Dixon et al., 2018; Johnson et al., 2023). Dixon et al. (2018) recruited a sample of traders and conducted focus groups to investigate representations regarding excessive trading and its similarities with gambling. Johnson et al. (2023) analyzed Reddit posts regarding the cryptocurrency market posted after a market crash. Despite the utility of these studies, several aspects may deserve additional investigation. First, both studies employed the method of content coding that may be linked to a bias in the nature of the information selected. Also, qualitative material of the study by Dixon et al. (2018) was collected during focus groups instead of individual interviews. As acknowledged by the authors, this may have limited the emergence of material because in-depth interviews may be needed to illuminate the psychological processes underlying behaviors (e.g., thoughts and emotions). In addition, some personal issues eliciting shame may not have been expressed in the group context. Also, the study of Johnson et al. (2023) is useful for the understanding of psychological reactions to market crash but does not fully illuminate the everyday functioning of traders. Lastly, a potential limitation of both studies

is that none focuses exclusively on individuals most at risk for problematic trading, namely those who trade cryptocurrencies.

To bridge these gaps and to test the utility of the qualitative approach we developed a semi-structured interview, The Experiences of Trading Interview (ETI), based on the systematic review conducted by Loscalzo et al. (2025). Doing so, we adapted the Indiana Illness Psychiatric Interview that has been previously used in several studies including research investigating gambling disorder (Rogier et al., 2020). To reach our exploratory purpose, we then administered the interview to a sample of traders and performed qualitative analyses. In particular, our aim was to explore the phenomenology of problematic trading, identifying its common features shared with problematic gambling as well as specific manifestations. We formulated the broad hypothesis that some features of problematic gambling such as chasing would be identified as well as some distinctive aspects specific to trading activity. A secondary related aim was to develop a clinical interview useful to screen for psychological problems related to trading.

## 2. Methods

### 2.1 Procedure and participants

After the development of the ETI (see the *Material* section) a sample of 29 Italian traders has been recruited through a convenience sampling technique. The sample consisted of a majority of males (85.5%) and had a mean age of 33.80 years (S.D.= 11.48). Trading was not the main working activity for all traders. All reported to be involved in day-trading of cryptocurrencies and some also traded on the stock market. They reported a mean experience with trading lasting 2.30 years (S.D.=1.92). The maximum number of hours per day spent trading in the last month was an average of 4.50 hours (S.D.=4.82).

Traders were recruited in trading academies and online communities. A brief written presentation of the study was sent, and an online appointment was fixed with interested traders. A member of the research team explained the scope and the procedure of the study as well as issues related to anonymity and privacy. In case the trader accepted to participate, a written informed consent was signed, and the research procedure began. The whole procedure was approved by the Ethical Committee of the University of Genoa.

### 2.2 Material

A brief initial questionnaire developed for the aims of the study collected basic socio-demographic information as well as some information regarding past trading activities.

The ETI has been developed in several steps. First, a list was created, listing all relevant descriptions of potential problems linked to trading behaviors.

This list was created using:

1) aspects described by the conceptual and empirical contributions on problematic trading from the pool of studies included by Loscalzo et al. (2025).
2) aspects described by the transdiagnostic model of behavioral addictions (e.g., salience, see Griffiths, 2022).
3) Aspects described in gambling literature (e.g., chasing).

Then, these elements were grouped according to similarities and/or potential overlap and several sections were identified. Lastly, for each section a primary question as well as several secondary questions were formulated. The secondary questions aimed to elicit more in-depth descriptions of psychological processes involved in the descriptions of problems such as asking details about behaviors, thoughts and emotions as well as asking specific examples.

Importantly, the first question was adapted from the Indiana Illness Psychiatric Interview and was aimed to elicit spontaneous material regarding the history of trading as well as to increase familiarity. The interview was semi-structured with questions order which can change to adapt to the narratives' flow. Specific instructions were written, and transcriptions of the interviews were regularly checked to ensure the homogeneity of administration. The ETI contained the following subsections: Story of trading activity, Experiences of (subjectively) relevant losses, Experiences of (subjectively) relevant gains, Negative consequences/functional impairment of trading. A translated English version of the ETI is available as supplementary material.

**2.3 Qualitative analysis procedure**

All interviews were recorded and transcribed and each transcript was divided into sections, corresponding to those listed in the following paragraphs. Therefore, separate corpora were available for analyses. After preparatory operations, each one was processed with the 10$^{th}$ version of the T-LAB software for Windows, performing a thematic analysis (Lancia, 2004). This analysis allows the identification of thematic clusters that are defined by a list of lemmas that co-occur in the same elementary context units (i.e., groups of consecutive words). The representative value of each lemma in the cluster is indicated by the value deriving from the chi-squared test. Then, an interpretative process was carried out involving two research members. Specifically, for each cluster, the team members separately formulated an interpretation according to the most representative lemmas. Then, discussion between researchers was carried out to reach a consensus also consulting the elementary context units (i.e., portions of the text) containing the lemmas to test the congruence or refine the interpretations made. Each cluster is also uniquely related to two factors, corresponding to the latent structure of the narratives.

These factors consist of two opposite polarities, each characterized by specific lemmas, and shape the conceptual space where the thematic clusters are located. After the interpretation of factors and the examination of their relationships with clusters, the label of the cluster could potentially be refined through an additional interpretation process.

## 3. Results

A summary of the list of clusters identified in each section is available in Table S1 of supplementary materials.

### 3.1 Story of trading activity

Regarding this corpus, a total of seven clusters were identified together with the two factors. The first factor was labelled *Representation of the route* which ranges from *Trading as a way to reach life objectives* to *Trading as a study activity*. Instead, the second factor was labeled *Regulation* level as it contains a pole describing *Cognitive self-regulation* and the other describing *Emotion dysregulation*. For each cluster, most significant lemmas and some illustrative elementary context units are displayed in Table 1.

**Table 1.**

*Labels and clusters of clusters identified in the section "story of trading activity"*

| **Cluster 1. Approach to trading techniques** | | |
|---|---|---|
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **Market** | 41.01 | "I didn't know anything. And I started making investments because I had colleagues and friends who were talking about it, I was interested too. I didn't know about it, so I said, we'll take it because the market is going up so much". (MC02)<br><br>"I wanted to understand why there were these market fluctuations and how to anticipate them. […]. I really wanted to understand why they went up and down and so I started studying" (MC128). |
| **Investment** | 27.14 | |
| **Day** | 27.13 | |
| **To increase** | 25.51 | |
| **To decrease** | 23.35 | |
| **Quick** | 23.35 | |
| **Colleague** | 19.46 | |
| **To wait** | 18.34 | |
| **To loss** | 15.63 | |
| **Short selling** | 15.56 | |
| **Cluster 2. Personal unsatisfaction and redemption** | | |
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **Covid** | 46.11 | "But in short, my anger was that I have three small children, I want to enjoy them, I want to have the energy to be with them and so we decided to stop working. Indeed, being a job like this, it gave me a lot, for me, I repeat, it was an immense joy and personal satisfaction." (RG128)<br><br>"If you do it for fun, if you don't care that much and you manage to detach yourself from the emotion of gain and loss, you can paradoxically earn more than if you do it because you have to earn a salary." (MC05) |
| **Emotion** | 40.33 | |
| **Satisfaction** | 34.56 | |
| **Percentage** | 33.83 | |
| **Forex** | 28.34 | |
| **Gain** | 25.73 | |
| **Clever** | 23.03 | |
| **Detachment** | 23.03 | |
| **Managment** | 23.03 | |

| **Cluster 3. Training and interest** | | |
|---|---|---|
| **Lemmas** | **$\chi^2$** | **Examples of elementary contest units** |
| To understand | 60.93 | "I realized that for me it was all Arabic, that is, seeing these graphs, these candles, I didn't understand [*PlatformName*], I didn't understand the platforms, the only thing I knew was this coin based platform with which I knew how to buy and sell but without logic, without following a scheme without rules." (MC103)<br><br>"For me, trading is something that must be understood, studied, assimilated in order to then be able to trade and do it in a professional, semi-professional way." (MC100) |
| To follow | 32.40 | |
| Best | 28.18 | |
| Trainer | 27.35 | |
| Platform | 26.48 | |
| Fun | 23.23 | |
| To inform | 22.56 | |
| Worse | 17.01 | |
| To know | 14.10 | |
| Accademy | 12.93 | |
| **Cluster 4. Temporal growth** | | |
| **Lemmas** | **$\chi^2$** | **Examples of elementary contest units** |
| **To begin** | 57.89 | "So I started with cryptocurrencies, I started holding, therefore without the pretense of wanting to operate in the short term and with encouraging results, so much so that they then led me to start studying, to take an interest in and to expand a little on what was a little interest." (MC105). "So I said to myself, to do this, put the money and then risk losing it, it's better to start studying, it's better to start looking into the matter further, and from then on, my journey of study began, in short, to understand what is happening in the market, and try not to be someone who gets carried away both psychologically and then in action, let's say, in practice." (MC02) |
| **June** | 25.37 | |
| **To be interested in** | 23.22 | |
| **July** | 22.10 | |
| **To deepen** | 19.17 | |
| **Moment** | 16.70 | |
| **To study** | 16.53 | |
| **Child** | 14.72 | |
| **Route** | 14.72 | |
| **Emotive** | 13.12 | |
| **Cluster 5. Professional activity and orientation to future** | | |
| **Lemmas** | **$\chi^2$** | **Examples of elementary contest units** |
| **Society** | 58.54 | "This has always been my dream, forever. So I already had this passion for entrepreneurship, because then alongside it I also made other types of investments, real estate. And so nothing, I opened up to this world, I discovered that I like it, it's cool, I like it, maybe too much." (RG134)<br><br>"Let's say that in the last year I have moved away from the operational trading part a bit or at least the operational part has decreased a little in favor of the product development part but I am still in the trading field." (MC101) |
| **Website** | 55.94 | |
| **Science** | 54.62 | |
| **To become** | 51.77 | |
| **To apply** | 33.81 | |
| **To control** | 29.24 | |
| **Duty** | 29.24 | |
| **Analysis** | 27.90 | |
| **To find** | 27.13 | |
| **Investment** | 24.20 | |
| **Cluster 6. History of loses** | | |
| **Lemmas** | **$\chi^2$** | **Examples of elementary contest units** |
| **Result** | 27.90 | "I really had no idea what it was, in fact, I initially saw it as a fairly simple way to make money and in large quantities. In fact, with the first approach I had, not knowing what I was talking about, let's say, it was proposed to me, several projects were proposed which I abandoned over time and which led me to lose money." (MC06) |
| **Money** | 26.95 | |
| **To propose** | 26.61 | |
| **To approach** | 25.97 | |
| **Broker** | 21.28 | |
| **Position** | 20.54 | |
| **Idea** | 20.44 | |

| | | |
|---|---|---|
| **To loss** | 17.64 | "If you are losing you are afraid of closing the trade because, when you close a trade at a loss, practically psychologically, you make the loss yours. Instead, what was I doing, making a mistake, because I too had to eventually learn to use it like a video game, that is, establish mandatory mathematical rules to apply, but I |
| **To close** | 15.89 | |
| **Chance** | 15.47 | |
| **Fear** | 13.10 | |
| **Cluster 7. Spillover of trading in the everyday life.** | | |
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **Life** | 35.45 | "Clearly this is where adrenaline, dopamine, comes into play, I think, because that is, I felt much more accelerated, and I saw that my brain really always needed this thing. This is why I have gone through periods in my family life with problems." (RG129)<br><br>"The though of trading must be fixed, it must haunt me, that is, I have it now, I have anxiety. In the sense because I realize that my problem is not so much over trading understood as the number of exaggerated operations, but overtrading understood as adrenaline-filled."(RG125) |
| **Time** | 32.39 | |
| **To occupy** | 30.84 | |
| **To create** | 29.60 | |
| **Pleasure** | 25.93 | |
| **Overtrading** | 24.66 | |
| **Calm** | 24.06 | |
| **To find** | 18.62 | |
| **Anxiety** | 18.17 | |

The first factor describes the initial *Approach to trading techniques* and was associated with the *Trading as a study activity* and the *Cognitive self-regulation* factors' poles. This clusters encloses descriptions of initial approach to trading that often takes the form of curiosity and trading activity made without criteria. Also, participants referred that this initial approach transformed into an interest in the understanding of financial mechanisms underlying market fluctuations.

The second cluster was labelled *Personal dissatisfaction and redemption* and is tightly related to the *Emotion dysregulation* pole of the second factor. This cluster included the narration of the motivation underlying the increase in involvement in trading that was tightly related to personal lack of satisfaction in their own lives. Several participants reported to have begun trading during the pandemic of COVID-19 and most described trading activity as a way to compensate for frustration at work as well as to increase self-esteem. However, participants stressed that this motivation was likely to increase the proneness to emotion dysregulation during trading and therefore the need to detach from drives related to personal frustration.

The third cluster was labelled *Training and interest* and is related to the *Trading as a study activity* and the *Cognitive self-regulation* factors' poles. In this cluster, participants described their history of trading as a history of training and study, characterized by their perceived need to understand market mechanisms. They also described different media of training including following influencers on YouTube or following courses in a trading academy. In this cluster, participants stressed the value of performance, aiming to do the best and avoiding the worst.

The fourth cluster was labeled *Temporal growth* and is related to the *Trading as a study activity* and *Emotion Dysregulation* factors' poles. Here, participants described a temporal evolution of their trading activity that began with dysregulated behaviors and transformed into a rational strategy, learned through study. They stressed that initial gains motivated them to deepen the topic of

trading and that the route towards a functional activity is marked by study and management of emotional aspects.

The fifth cluster has been called *Professional activity and orientation to the future* as is related to the *Life objectives* and *Cognitive self-regulation* factors' poles. In this cluster, participants reported the representation of trading as a professional activity as opposed to leisure. They represent trading as a new working activity that would allow to fulfill everyday life duties. However, this possibility was viewed as conditioned by the need to control oneself and adopt a rational approach.

The sixth cluster is named *History of losses* and is related to the *Trading as a study activity* and the *Emotion dysregulation* factors' poles. In this cluster, traders report a history of huge losses characterizing their initial approach to trading. They described the difficulty to accept losses and close positions and compare this attitude towards trading with gambling behavior.

The last cluster has been defined as *Spillover of trading into everyday life* and is related to the *Trading as a life objective* and *Emotion dysregulation* factors' poles. Here participants described trading activity as a pervasive thought that invaded their mental and personal space. In particular, trading is described as very time-consuming as a source of thrill that is pleasurable and consequently leads to overtrading behavior.

### 3.2 Loss, tilt and chasing section

For this corpus, the analyses revealed four clusters and two factors. The first factor has been labeled *Control level* ranging from the poles *Control strategies* and *Lack of control*. The second factor was named *Impulsivity level* and ranges from the *Impulsivity* and *Planification* poles. For each cluster, most significant lemmas and some illustrative elementary context units are displayed in Table 2.

**Table 2.**

*Labels and clusters of clusters identified in the section "Loss, tilt and chasing"*

| **Cluster 1. Self-control** | | |
|---|---|---|
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **To put** | 141.66 | "By insisting you end up making a self-criticism that never ends, that's what I usually do, when I have days like this I don't trade for days just to punish myself, because then if I were to do it again the next day, I still have one thing in mind to be recovered that day; therefore, I have to forget those losses to start from scratch." (RG126)<br>"It takes you months to find your own trading strategy that works and it takes you a lifetime to learn to manage your emotions." (RG123)<br>"So I've reached the phase of the time box where I enclose the necessary and I prevent myself from actually doing the experiments so then I face them no no I'll put it like this and precisely come on this is how I manage to distance myself, calm down and return, let's say, zen." (MC01) |
| **Day** | 56.76 | |
| **Days** | 31.23 | |
| **To listen** | 25.65 | |
| **To manage** | 21.79 | |
| **To move away** | 21.11 | |
| **Computer** | 20.21 | |
| **Memories** | 18.90 | |
| **Process** | 16.24 | |
| **To come back** | 15.25 | |
| **Brake** | 15.08 | |

| **Cluster 2. Reaction to loss.** | | |
|---|---|---|
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **To close** | 130.13 | "I ended the day with nine trades in total, seven loss and two positive, so a terrible day. The thought is that I can't erase everything I've done before, because a good trader sits down after having made a mistake in a trade, he sits down and it's as if he had never done anything before. I can't do it yet. […] That little voice no longer turns into, well done, you closed some transactions that needed to be closed, so that's it because it's not a day. Start being, well done you have them closed and correct, try again that maybe this one can go in the right direction for you. It becomes like candy to the child, you can no longer let go because you think the most negative moment is over." (RG126) "When things go badly I get angry. I get angry with myself and this also affects my day. […] When I was at a loss, I was anxious to check and understand how much I was losing. But the biggest thought was, why don't you close it if it's going bad, why don't you close it. But I couldn't do it in any way" (RG131) |
| **Bad** | 76.24 | |
| **Operation** | 66.54 | |
| **Day** | 40.36 | |
| **To succeed** | 36.09 | |
| **Stoploss** | 29.71 | |
| **To enter** | 28.87 | |
| **Sensation** | 26.74 | |
| **To detach** | 16.97 | |
| **To turn off** | 14.70 | |
| **Cluster 3. Chance.** | | |
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **To invest** | 75.15 | "Maybe with an operation I can earn a lot of money or have an expectation of earning it and, this having the bullet ready, it is a temptation and it tempts you to be able to make so much money to the point that you do it, even if you know very well that logic completely loses value and only emotions come into play." (MC04) "Raising the stakes after making a negative trade you are still at the stage where you […] consider it a game of chance, so you take a chance." (MC105). |
| **Money** | 55.58 | |
| **To gain** | 41.87 | |
| **Loss** | 40.93 | |
| **To live** | 27.94 | |
| **Gambling** | 25.65 | |
| **Pleasure** | 25.57 | |
| **Entry** | 23.50 | |
| **Unique** | 23.11 | |
| **To sell** | 22.67 | |
| **Cluster 4. Protective factors.** | | |
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **Time** | 82.29 | "It takes study, it takes time." (RG130) "Follow the rules. So you impose the rules on yourself, and in reality those rules you give yourself always reshape themselves as time passes because, then you adjust them, you make them your own, but they have to be there. They must be there and I went so far as to write them down, I didn't do it, but there were those who printed the sheets and put them in front of them." (RG134) |
| **People** | 40.97 | |
| **Family** | 37.30 | |
| **To study** | 34.62 | |
| **To know** | 32.07 | |
| **Route** | 28.13 | |
| **Experience** | 27.49 | |
| **Rule** | 26.77 | |
| **Broker** | 26.66 | |
| **To begin** | 25.70 | |

The first cluster was labeled *Self-control* and was related to the *Control strategies* and *Planification* factors' poles. In this cluster, participants described their strategies used to face the lack of control over trading activity in reaction to significant losses. They stressed the need to turn off the trading activity, to move away from the computer and to put a brake on their emotional

processes. Also, some participants stressed the importance of evoking the emotional memory of loss before engaging again in trading.

The second cluster was labeled *Reaction to loss* and was near the *Lack of control* and *Planification* poles. In this cluster, participants described reactions to loss represented as dysfunctional including not closing a bad operation that is losing money and the difficulty to cope with negative sensation towards themselves that motivate the desire for operating again, combined with cognitive bias regarding illusion of control.

The third cluster has been named *Chance* and is related to the *Impulsive* pole of the second factor. This cluster described gambling-like behavior that may either precede losses or emerge in reaction to loss. In particular, traders report a strong drive for gaining money as a risk factor for considering trading activity as a game based on chance. Specifically, it is the emotional drive connected to pleasure that would underlie this mechanism.

The last cluster has been labeled *Protective factors* and lies on the *Control strategies* pole of the first factor. The protective factors that allow them to maintain control over unregulated trading behaviors including the awareness that learning trading techniques is a long route and setting personal rules in trading. Viewing trading as an activity that need technical knowledge and experience is described as a psychological resource preventing them from reacting in a dysfunctional way to losses.

### 3.3 Gains and overtrading

We identified four clusters lying on two factors named *Regulation* (ranging from *In-session* to *In-context*) and *Attitude towards success* (ranging from *Pursuing* and *Fantasizing*). For each cluster, most significant lemmas and some illustrative elementary context units are displayed in Table 3.

**Table 3.**

*Labels and clusters of clusters identified in the section "Gains and overtrading"*

| **Cluster 1. Positive fantasy.** | | |
|---|---|---|
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **Beautiful** | 66.69 | "I only started to feel this feeling when I looked at my GNP, I saw that I had made these two hundred dollars. Because before I was calm while I was doing the operations I said, but look at what stuff this is, what a story this one is, what a beautiful thing, what a beautiful conformation, and I was calm. I watched GNP and boom suddenly I started feeling ok." (RG128)<br>"I must have thought wow, how good am I, I'm very good, I'm the best trader in the world or something like that. But I remember why I immediately thought that time I have to stop because I'm no longer lucid" (RG128)<br>"I congratulated myself. I said well done, but above all a beautiful day" (RG132). |
| **To think** | 43.66 | |
| **Sensation** | 35.11 | |
| **To look** | 32.67 | |
| **Memories** | 19.85 | |
| **Investment** | 19.44 | |
| **To obtain** | 16.92 | |
| **To make** | 16.84 | |
| **Calm** | 16.84 | |

| | | |
|---|---|---|
| **Day** | 16.72 | "When you are positive that you earn, you feel good, it is a sensation. On the one hand, it depends on how you earn it, because if you earn it by doing wild trading it is a feeling of greater euphoria." (MC05) |
| **Cluster 2. Overtrading features.** | | |
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **Amount** | 68.15 | "You necessarily want to get there, I have to get to two thousand, that is, thirty dollars are missing which I will put in then so what happens, that you force the trade to get to those two thousand." (RG127)<br>"I get pissed off. I get really pissed off, because I say, hell I spent maybe a month, I earned four hundred dollars, then in three days I burned it like this to be an idiot. Yes, I'm pissed at myself, because I know why I lost that money, because I didn't pay more attention to it." (RG127)<br>"So, at first I cheated myself. I said, I don't want to come in with a hundred dollars anymore, I want to come in with a thousand dollars because I'm more stimulated." (RG134)<br>"When you come from a big win it's as if you feel like you have a bonus, that is, if like you made a hundred dollars an hour, like you have ten dollars to throw at bets, then you start trading like this, a little consciously too , you see you say it's not a perfect trade but it works, but who cares I earned so much" (RG125) |
| **Coin** | 64.94 | |
| **Percentage** | 64.34 | |
| **Operation** | 38.70 | |
| **To allow** | 31.19 | |
| **To arrive** | 22.42 | |
| **Month** | 19.36 | |
| **To see** | 18.88 | |
| **Pleasure** | 17.63 | |
| **To seek** | 14.29 | |
| **Cluster 3. Temporal processes related to emotions.** | | |
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **To take** | 112.64 | "Incorrect emotional management. Because, just as I have to emotionally manage a loss, I have to emotionally manage a profit. So if I have had a huge profit and I am busy making another one right away, it means that I am obviously rushing, without thinking clearly, it means that I have no emotional management, it means that there is something wrong." (MC03)<br><br>"You have to be very cold and detached, whether you are losing or winning, because in both cases if you get too caught up in the emotional state in one you then fall back into the comeback and in the other you get too caught up in the euphoria and in both cases they are unsuitable vehicles." (MC100) |
| **Profit** | 86.07 | |
| **Loss** | 64.06 | |
| **Emotionality** | 48.28 | |
| **To stop** | 32.71 | |
| **To manage** | 22.89 | |
| **Pieces** | 22.20 | |
| **Costancy** | 20.96 | |
| **High** | 20.60 | |
| **To succeed** | 19.53 | |
| **Cluster 4. Sharing as an instrument to understand problems in trading.** | | |
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **Trainer** | 70.05 | "But in the early days I was at the mercy, I also understood this by talking to various guys or talking to [TrainerName] or when there is a situation that is too euphoric, you feel that you can do anything, you can cheat at any moment, whatever happens in profit, so much the market. And then you take some beatings because you make mistakes caught up in too much euphoria." (RG133)<br><br>"I basically related all the mistakes I made to what [Name1] said […] because I listened to him a lot and I wanted to empathize with him as a person to fully understand what he wanted to say." (RG132) |
| **Platform** | 40.65 | |
| **Money** | 34.68 | |
| **Financial** | 32.85 | |
| **Mistake** | 29.15 | |
| **People** | 28.45 | |
| **Video** | 26.71 | |
| **To talk** | 24.31 | |
| **Problem** | 20.06 | |
| **To understand** | 18.38 | |

The first cluster was labeled *Positive fantasy* and is related to the *Fantasizing* pole. In this cluster, traders described the highly rewarding effect of gains during trading that are represented as connected to beautiful, euphoric experiences and positive sensations towards self-image.

The second cluster has been labeled *Overtrading features* and is related to the *Pursuing* pole of the *Attitude towards success* cluster. In this cluster, participants described dysfunctional reactions to significant gains, explaining that these events trigger perseveration and overtrading. Pleasure connected to gain appears as a core mechanism of this process that consists in increased risk-taking and sensation seeking and leads to money loss.

The third cluster has been labeled *Temporal processes related to emotions* and is related to the *In-session regulation* and to *Fantasizing success* poles. Here, traders described the emotional component of dysfunctional reactions to profit, evidencing that this can lead to loss. To succeed in the management of these emotions to be able to maintain a constant strategy towards trading and to stop trading activity when needed is seen as a key objective to achieve.

The last cluster, named *Sharing as an instrument to understand problems in trading* is related to the *In-context regulation* and the *Fantasizing success* factors' poles. Traders reported that a way to control problematic psychological reactions in trading is understanding these processes through confrontation with other traders or trainers. Observing common mistakes in others is referred to as an helping process to develop regulatory strategies.

### 3.4 Salience of trading-related thoughts and activities

In this corpus, we identified two factors on which four clusters were distributed. The first factor, *Sociality*, consists of the *Shared thinking* and *Auto-referential thinking* poles. The second factor, *Functionality*, ranges from the *Thinking as a resource for growth* to *Thinking as a source of personal distress* poles. For each cluster, most significant lemmas and some illustrative context elementary units are displayed in Table 4.

**Table 4.**

*Labels and clusters of clusters identified in the section "Salience of trading-related thoughts and activities"*

| **Cluster 1. Self-critical rumination.** | | |
|---|---|---|
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **Curse** | 48.59 | "If I do it again I'll get even more pissed off, damn. Maybe I think about it because, it's already happened once, that is, "Then you don't understand, then you're stupid"." (RG127)<br><br>"Obviously that is worse because, that is, you are you and in any case you always have to blame yourself because you can't blame anything, anyone, maybe in life in general you have alibis, not here. Obviously not, you get angry so you say who you're taking it out on, yourself, "You're an idiot." (RG126) |
| **To open** | 30.71 | |
| **Process** | 27.36 | |
| **To get angry** | 26.12 | |
| **Result** | 21.77 | |
| **To distract** | 18.22 | |
| **Everyday life** | 18.22 | |
| **To increase** | 17.36 | |

| | | |
|---|---|---|
| **Different** | 13.02 | |
| **Cluster 2. Invasion of personal space.** | | |
| **Lemmas** | **$\chi^2$** | **Examples of elementary contest units** |
| **Time** | 52.4 | "Sometimes time passes, but you don't realize it, more than anything this is the time that passes without realizing it." (MC100)<br><br>"Maybe sometimes I know that it doesn't make sense to spend hours in front of graphs, but I'm there anyway." (MC06)<br><br>"If I could I would dedicate the whole day to trading, but with my wife and children working, there isn't much time for trading. So maybe sometimes I steal a few hours at work, a few hours in the evening after dinner and the time is stolen from what was previously dedicated to family or work." (RG126) |
| **To spend** | 31.47 | |
| **Objective** | 30.59 | |
| **Regret** | 25.57 | |
| **To dedicate** | 24.25 | |
| **Loss** | 21.90 | |
| **To take risk** | 18.24 | |
| **Gym** | 14.59 | |
| **Graph** | 13.59 | |
| **Money** | 12.34 | |
| **Cluster 3. Passion.** | | |
| **Lemmas** | **$\chi^2$** | **Examples of elementary contest units** |
| **Moment** | 14.83 | "For me this is a passion now, it's not just a job."(RG126)<br><br>"It's something I like, and that is I have passion." (RG127)<br><br>"You want to be better or in any case you have the pleasure of doing it well, you must always try, not an obsession, but you must always try to improve yourself." (MC02) |
| **Coin** | 13.36 | |
| **To understand** | 12.61 | |
| **To make profit** | 11.76 | |
| **Passion** | 11.17 | |
| **Pleasure** | 10.76 | |
| **To study** | 10.76 | |
| **Children** | 10.10 | |
| **Years** | 9.76 | |
| **Adrenaline** | 9.30 | |
| **Cluster 4. Sharing** | | |
| **Lemmas** | **$\chi^2$** | **Examples of elementary contest units** |
| **To talk** | 40.78 | "Having something that unites us so deeply is something is just beautiful. I experience something like this as something beautiful." (MC102)<br><br>"Very helpful people, people who always help you. Then maybe there is the person, that is, the trainer who teaches you in one way, the trainer who teaches you in another."(MC07)<br><br>"You can always ask this person and he will explain everything to you, let's say teachings. They are always trying to bring out the best in you." (MC01) |
| **Person** | 23.80 | |
| **Beautiful** | 21.40 | |
| **Instruction** | 20.64 | |
| **People** | 16.01 | |
| **Rules** | 13.10 | |
| **Activity** | 11.78 | |
| **Need** | 11.78 | |
| **Managment** | 11.78 | |
| **Days** | 11.78 | |

The first cluster was labeled *Self-critical rumination* and lies on the *Thinking as a source of personal distress* pole. In this cluster, traders report that rumination about losses significantly impair well-being in everyday life. In particular, self-critical thoughts are related to anger towards the self who is blamed for being an idiot or stupid. The aggressive inner dialogues are characterized by curses and insults towards the self.

The second cluster was called *Invasion of personal space* and lays on the *Auto-referential thinking* and *Thinking as a source of personal distress* factors' poles. Here, traders report that trading is very time-consuming creating a conflict with other life areas such as family. Interestingly, looking to graphs without operating is described as an activity that elicits absorption leading to a loss of time perception.

The third cluster has been labeled *Passion* and lies on the *Shared thinking* and *Thinking as a resource for growth* poles. In this cluster, traders report that salience of trading is tightly linked to a passion for this activity. They differentiate between obsession and passion for the understanding of trading mechanisms that is connected to pleasure in studying.

The last cluster is named *Sharing* and is related with the *Shared thinking* pole. In this cluster, traders referred that the huge place that trading occupies in their life is linked to interpersonal processes. Indeed, they described a social environment connected to trading (either in vivo or virtual) that is experienced as rewarding. Sharing experience with other people is also viewed as a need to learn rules to manage their own approach to trading.

### 3.5 Negative consequences

Regarding the last corpus, we identified two factors and four clusters. The factors were labeled *Obsessivity* and ranges from *Perfectionism* to *Lack of control*. The second factor was labeled *Pervasiveness* with the poles being named *Overinvestment of an existential plan* and *Emotional consequences* respectively. For each cluster, most significant lemmas and some illustrative context elementary units are displayed in Table 5.

**Table 5.**

*Labels and clusters of clusters identified in the section "Negative consequences"*

| **Cluster 1. Fixed though and self-criticism** | | |
|---|---|---|
| **Lemmas** | $\chi^2$ | **Examples of elementary contest units** |
| **To suceed** | 35.08 | "I wake up at night, automatically, I get up, I sit at the desk, I turn on the computer, I see that I'm in the red, I don't sleep all night and I sit there watching. Which then, even there, you are losing, if you started the position, you had already taken into account that you could lose what you are looking at, understood, what you have to look at." (MC01)<br>"The next morning, I also woke up anxious to see how the graph was doing; so, when I woke up, I picked up the phone." (RG131)<br>"Trading made me feel a little helpless in addition to belittling me and making me feel belittled as a person, because then you don't make a difference between I'm good and I'm an idiot." (MC101) |
| **To detach** | 22.03 | |
| **To see** | 20.30 | |
| **Sadness** | 15.52 | |
| **Graph** | 11.17 | |
| **To put oneself** | 10.01 | |
| **To awake** | 9.62 | |
| **To look** | 8.93 | |
| **Night** | 8.69 | |
| **To enter** | 7.86 | |

| **Cluster 2. Interpersonal context.** | | |
|---|---|---|
| **Lemmas** | **$\chi^2$** | **Examples of elementary contest units** |
| **To stop** | 52.67 | "I'm lucky to always have this guy who follows me, mainly, also emotionally and, in my opinion, over time it was something that needed to be put there, right at Academy level. Because yes, I repeat first of all the technicality is important, but it is not as important as emotional management." (MC03)<br><br>"If I'm having a day like that, and I want to recover and I start looking at the chat, it's worse [...] it doesn't help me because, even there, there's so much FOMO, so much desire that you have to necessarily trade." (RG133) |
| **To know** | 32.83 | |
| **Trainer** | 32.83 | |
| **Accademy** | 26.24 | |
| **FOMO** | 26.24 | |
| **To follow** | 14.94 | |
| **Awareness** | 13.29 | |
| **To manage** | 13.29 | |
| **To operate** | 12.36 | |
| **Emotional** | 9.53 | |
| **Boredom** | 9.53 | |
| **Cluster 3. Conflict with everyday requests.** | | |
| **Lemmas** | **$\chi^2$** | **Examples of elementary contest units** |
| **Work** | 15.44 | "Doing a part time job, so, once I work in the morning and once in the evening, I can set myself certain hours however, in the end I can only do it in those free moments, so yes, in that case it stays there, you're a bit more slave to trading."(RG127)<br><br>"So maybe sometimes I steal a few hours at work, a few hours in the evening after dinner and the time is stolen from what was previously dedicated to family or work." (RG126) |
| **Month** | 13.93 | |
| **Period** | 12.32 | |
| **Years** | 9.91 | |
| **To get angry** | 9.29 | |
| **Amount** | 9.29 | |
| **Big** | 9.26 | |
| **Evening** | 9.26 | |
| **Training** | 7.79 | |
| **Money** | 6.42 | |

The first cluster was labeled *Fixed thought and self-criticism* and is related to the *Lack of control* and the *Emotional consequences* poles. In this cluster, traders report that trading may lead to intrusive and fixed though. Especially in case of significant losses, negative emotions and self-criticism lead to a difficulty detaching cognitively from thoughts related to trading. Traders report waking up in the night or early in the morning to check graphs and operations' status.

The second cluster was named *Interpersonal context* and lies on the *Lack of control* and the *Overinvestment of an existential plan* factors' poles. In this cluster, traders described the interpersonal context as both a protective and a risk factor. Indeed, being in contact with trainers and other traders is a factor in increasing awareness and knowledge regarding problematic trading. However, participants highlighted that information regarding others' trading activity may elicit fear of missing out that would drive risk-taking behavior in trading.

The third cluster was named *Conflict with everyday requests* and is related to the *Perfectionism* and *Overinvestment of an existential plan* poles. Here, traders reported negative experiences related to the incompatibility of trading activity with the rest of life functioning, especially with other

working activities. The temporal dimension of trading is represented as highly demanding and potentially conflicting with everyday life.

The last and fourth cluster was labeled *Emotion dysregulation* and was related to the *Lack of control* pole. In this cluster, traders described dysregulation of emotions related to trading. Trading is viewed as eliciting intense positive and negative emotions that may lead to maladaptive perseverance in trading behavior.

## 4. Discussion

With this study, we aimed to contribute to the advances in our understanding of potentially relevant problems related to trading behaviors. The following discussion is structured by examining results that suggest the pertinence of the addiction/gambling models in the understanding of trading as well as results that instead highlight the specificity of the phenomenon.

Regarding the first corpus we observed that traders approached trading for fun and curiosity, operating without considerations of technical aspects. However, they stress that with time, they began to study trading techniques and move away from a chance-based approach. This suggests that traders may be motivated by similar reasons that drive people to gamble (e.g. fun). This converges towards the idea that trading may be experienced as a form of gambling, at least in the initial approach (Bauer et al., 2009). However, traders' representations stress the shift from considering trading as based on chance to an activity based on skills. Therefore, trading may be closer to games that are characterized by a high proportion of skills (e.g., poker) compared to those characterized only by chance (e.g., slot machines). In other words, traders may begin to trade for fun but persist for investment-related reasons. Another interesting finding is that the perception of trading as a technical activity is viewed as a way to avoid loss of control following intense emotions. Of note, the fact that loss of control over trading follows difficulties in emotion regulation is in line with the conceptualization of gambling addiction as an emotion regulation disorder (Rogier & Velotti, 2018).

Then, participants reported that motivation for trading was tightly related to some frustration in their life, especially in the working area such that trading is frequently perceived as an escape and a key for reaching social success. In other words, whereas some traders may trade for fun, others get involved in trading because of existential issues. These data are in line with observations suggesting the role of motivation for escaping from personal problems as well as materialism (Grall-Bronnec et al., 2017; Louderback et al., 2024). More importantly, this motivation was related to under-regulated trading behavior, stressing that this motivation may

underlie problematic trading. This is not surprising as overinvestment in personal goals is related to rigid coping processes (Mancini & Gangemi, 2024).

The section related to reactions to losses illuminated the topic of control over psychological and behavioral reactions as well as impulsivity. Traders experience problems related to the dysregulation of intense negative emotions and try to develop strategies to detach from trading. This finding aligns with quantitative studies observing the association between problematic trading measured with gambling-based instrument and several dimensions of impulsivity (Coloma-Carmona et al., 2025a; Coloma-Carmona et al., 2025b; Sonkurt & Altinöz, 2021; Yiğman et al., 2023). We also found that operating keeping in mind past losses was associated with lack of control. Dysfunctional behaviors included chasing but also not closing an trade that is going into a loss. From this perspective, this difficulty specific to trading may be related to the same mechanism related to the difficulty to accept or *go through* the psychological distress associated to the loss (Velotti & Rogier, 2018) in turn potentially related to a lack of punishment sensitivity (de Ruiter et al., 2009). In addition, losses were often associated with higher risk-taking and loss of lucidity. Therefore, problematic behaviors in trading are not limited to the increase of the amount of money invested or to the perseverance in trading but also include the abandonment of the initial technical strategy. This is similar to the Tilt phenomenon, described among poker players (Moreau et al., 2017).

Moreover, participants reported that dysfunctional reactions to loss are related to the motives for trading. According to them, trading for reward would be associated with intense emotions when facing losses. In contrast, representing trading as an activity requiring technical and psychological skills would protect from dysregulation. Noteworthy, we may wonder if this is a criterion for identifying problematic trading or if it may rather be the expression of a cognitive bias underlying an illusion of control. Indeed, individuals suffering from addiction to skill-based games may elaborate especially complex and convincing winning systems that would predict the outcome (Clark & Wohl, 2022; Cooper et al., 2022).

Regarding the corpus focused on reactions and potential problems following significant profit, several interesting data emerged from our analyses. First, the role of regulation of positive emotions appears as a central mechanism that, according to traders, explain dysfunctional behaviors such as overtrading that is excessive perseverance and/or increased risk-taking. The core emotions involved are adrenaline, euphoria, thrill and high sensations. This is similar to what has been observed among gamblers with high levels of sensation-seeking and a proneness to act rashly when experiencing positive emotions (Rogier et al., 2022). Also, these data converge on the idea that this personality trait is a shared feature between gamblers and traders (Grinblatt & Keloharju, 2009). Moreover, a phenomenon of tolerance has been described regarding the

amount of money that should be traded to satisfy the need for thrill. Importantly, sensation-seeking has been found to be a frequent motivation underlying trading (Cox et al., 2020) and to associate with trading frequency and volume (Antonelli-Filho et al., 2021; Grinblatt & Keloharju, 2009) as well as stock addiction levels (Son & Jeong, 2023). This supports the utility of the addiction framework in the understanding of problematic trading. Lastly in this section, traders indicated that problematic behaviors following profits lead to losses and in turn elicit chasing following negative emotions. From this perspective, dysregulated emotional states following gains seems to foster a vicious circle maintained trough chasing.

Another interesting result is that potential problems in reaction to profits are associated with an excessive increase in self-esteem, feelings of being successful and overconfidence. This supports the view of overconfidence as a central cognitive bias involved in problematic trading (Singh et al., 2024). It is also in line with the conceptualization of gambling disorder as tightly related to narcissistic fragility (Lesieur & Rosenthal, 1991). In other words, trading events (i.e., gains or losses) may be rewarding or painful not only because of monetary outcomes but also because of their effect on self-esteem levels.

Importantly, traders are aware of the need to pay attention to these emotional aspects. For example, sharing experiences regarding personal issues with other traders or trainers is depicted as a relevant resource. How this unfolds is not entirely clear from the narratives, but several hypotheses may be formulated. For instance, interactions may offer modeling, emotional support facilitating acceptance and/or providing opportunities for self-analysis that increases awareness.

The section of the interviews focused on potential excessive cognitive salience of trading brought insightful results. Traders experience personal distress in reaction to losses. This threatens self-esteem and elicits self-critical rumination characterized by hostile and angry inner dialogues towards the Self. Details regarding this aspect are also provided by the analysis of the section of the interview focusing on negative consequences where these thoughts are described as intrusive, persistent and disturbing. Thoughts regarding trading assume an obsessive valence and may even weaken sleep quality. Extending our previous reflection, relevant losses may trigger the onset of depressive symptoms that, in some cases, would even lead to suicidality as it has been observed in the field of gambling (Marchetti et al., 2020). From this perspective, poor self-compassion and the difficulty to accept failure may act as a core risk factor.

Also, trading activity is represented as potentially conflicting with other life domains. This topic has also been identified in the *Negative consequences* section of the ETI. This would be associated with the great amount of time required by this activity (Brand et al., 2023). This feature of trading

may potentially be facilitated by structural characteristic of the devices that are likely to elicit absorption and alteration of time perception. However, this is mostly associated as experiencing trading as a passion that provides pleasure, despite this also has the potential to become obsessive. The notion of harm is central in drawing the line that separates normality from pathology. In addition, the fact that the trading activity is described as a condition that is likely to elicit absorption could be compared with the role of dissociative processes that contribute to gambling disorder (Rogier et al., 2021).

A last interesting finding consists in the representation of trading as an activity that supports relationships. The position that trading takes place is also associated with the interpersonal context that surrounds such activity. This is represented as protective and a resource for personal learning and growth. Therefore, in some cases, trading may not invade life areas but instead enrich such domains by, for instance, creating a new context for developing human bonds. This is very similar to the description of social gambling that is not considered maladaptive. From this perspective, the assessment of the functionality of trading behavior may benefit from an evaluation of its role in interpersonal functioning. Indeed, despite this positive valence of trading, other dysfunctional mechanisms may occur. In particular, sharing information regarding successful operations is likely to elicit fear of missing out that is connected to dysfunctional trading behavior. Interestingly, this feature has not been reported as related to gambling behavior but is thought to be relevant in the explanation of social media misuse (Fioravanti et al., 2021). This might be a specificity of problematic trading that deserves future research.

## 5. Clinical implications

Despite the exploratory nature of this study, our findings suggest potential clinical implications. First, traders indicated that trading activity can actually be related to psychological problems experienced as relevant for this population. This indicates the need for further investigation of these issues that would allow clinicians to be adequately informed and prepared for potential requests for psychological support from individual engaged in trading activity. Then, the study suggests that, as expected, using exclusively the lens of the addiction models to frame emerging problematic behaviors such as trading should be completed by a broader approach allowing for the identification of specific features characterizing the condition. Then, our findings suggest the role of several potential key factors explaining problematic trading such as impulsivity, poor emotion regulation capacities, personality traits and materialistic motives. In case future quantitative research would support the role of these aspects, the assessment and intervention process may greatly benefit from a focus on these psychological variables. Lastly, the richness of the material emerging from the administration of the ETI and its semi-structured nature

suggest that this could be a useful tool in the assessment process of individuals seeking help for psychological problems related to trading. In addition, the results emerged for this study, coupled with an exhaustive examination of the available descriptions of problematic trading in literature, could be used as an insightful base on which developing quantitative measures of problematic trading that, at least partially, overcome the self-confirmatory bias plaguing the process of tools development in the field of behavioral addictions.

## 6. Limitations and future directions

From a methodological point of view, the data could not be considered representative of the whole population of traders. Indeed, trading is a multifaceted activity that could be carried out on a plurality of financial instruments such as stock market or futures. Also, none of the traders recruited was a professional and no information was collected regarding their profitability. Similarly, technical preparation may vary across traders' population. Because of the heterogeneity of the population, our results could not be considered fully representative.

A conceptual limitation is related to the risk of collusion with the representations traders have of (problem) trading. Indeed, individuals are used to describe their problems using the meaning categories that social discourses make available (Brinkmann, 2016). Because concepts related to addictions and notions such as Tilt and Fear Of Missing Out are popular in the media and in specialized forums or communities, we should keep in mind that individuals narrate their problems using these categories (Voros, 2009). This Foucauldian perspective implies that using a qualitative exploratory approach would not totally exclude the bias of the conceptual shaping of representations.

The last limitation consists of the bias that may have impacted the development of the ETI. Indeed, despite our efforts to reduce epistemological biases by being as exhaustive as possible, we may not totally exclude it. For instance, associated questions used to elicit more detailed descriptions of trading problems were focused on feelings, thoughts and behaviors that are the psychological variables that are the focus of the cognitive-behavioral assessment. Moreover, because we are psychologists, some technical aspects related to problems in trading such as the nature of market events have been not probably detailed enough during the interviews or have been overlooked during the interpretative procedure.

## 7. Conclusions

As a whole, our study suggests the utility of the ETI in exploring the issue of problematic trading and stresses the need to adopt a more qualitative and exploratory approach when examining new potential behavioral addictive behaviors. The limitations of our study call for additional research on the topic with studies recruiting more homogeneous and/or specific populations of

traders and multi-disciplinary studies including observation of financial behaviors during experimental tasks or real-life situations. Also, to extend our knowledge on the topic, the development of quantitative measures such as self-report questionnaires grounded on qualitative results appear to be a necessary development in the field. This would allow the more systematic investigation of the link between problematic trading and key variables identified in this study such as impulsivity, emotion dysregulation, personality traits and fear of missing out.

**Ethical approval**

The whole procedure was approved by the Ethical Committee of the University of Genoa, N°23/56 approved the 31/07/2023.

**Informed Consent Statement**

Informed consent was obtained from all subjects involved in the study.

**Data Availability Statement**

Data is available upon request, by sending an email to the corresponding author.

**Conflict of Interest Statement**

The authors declare that the research was conducted in the absence of any potential conflict of interest.

**Authors' Contribution**

GR was responsible for data collection, data analysis, conceptualization of the study, and drafting the original manuscript. MC contributed to data collection and participated in the analysis and interpretation of the data. PV provided supervision and contributed to the conceptualization of the study.

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**Appendix A**

**EXPERIENCES OF TRADING INTERVIEW**

**Participant: _____ Interviewer: _____ Date: _____**

This interview is designed to encourage participants to narrate the story of their trading experiences in their own way, while the interviewer asks the questions listed below.
Brief comments may be necessary to let the participant know the interviewer is actively listening. These comments should only reflect what the participant has already said, and should not introduce content that the participant hasn't mentioned.
The interviewer should not ask the participant to fill chronological gaps or stimulate information that wasn't included in the initial account.
The questions below do not need to be asked in order and should be adapted to the flow of the participant's narrative.
You may introduce the interview with a simple statement such as:

"The purpose of this interview is for me to understand, as thoroughly as possible, the story of your trading experiences, including what went wrong and what went well."

**Session I: General Free Narrative (Warm-up)**

I would like you to briefly summarize the story of your trading experiences.
Is everything clear? If you wish, you may ask me any questions about what I've just said.

(The narrative should last about 10/20 minutes; keep questions to a minimum.
Let the participant tell their story as they prefer.
Once the narrative ends, you may ask for more details on events that were less thoroughly covered.)

**Session II: Losses**

**Have you experienced significant financial losses while trading?**

If yes, can you tell me more about what happened?
(If there is more than one episode, ask about the most intense and/or most recent.)

- How did you react?
- What did you do?
- How did you feel?
- What were your dominant thoughts?

In your opinion, were there any psychological factors—positive or negative—that influenced how you reacted to that loss?

Some people report that after a major financial loss, they tend to make riskier investments in an attempt to recover the money they lost.
Has this ever happened to you? If yes, can you explain and give an example?

If NO, have you ever observed this behavior in others who trade? If yes, can you describe how it manifests?

**Have you ever heard of the phenomenon of "tilt" in trading?**
If YES:

- How would you define or describe this phenomenon?
- In your opinion, what causes this phenomenon?
- What happens when someone goes into tilt in trading?
- What does it feel like to be in tilt while trading?

If NO:
Some people report that after suffering major trading losses, they experience emotional states so intense that they affect subsequent trading decisions. Has this ever happened to you or someone you know? If yes, can you describe it in more detail?

Some people report that after suffering major trading losses, they lose control over their subsequent investments. Has this ever happened to you or someone you know? If yes, can you describe it in more detail?

Some people report that after suffering major trading losses, they lose mental clarity, which negatively affects their subsequent investments. Has this ever happened to you or someone you know? If yes, can you describe it in more detail?
(Ask questions about their mental state: have them define what "loss of clarity" means to them.)

**Session III: Profits**

Have you experienced significant financial gains while trading?
If yes, can you tell me more about what happened?
(If there is more than one episode, ask about the most intense and/or most recent.)

- How did you react?
- What did you do?
- How did you feel?
- What were your dominant thoughts?

In your opinion, were there any psychological factors—positive or negative—that influenced how you reacted to that gain?

Some people report that after a major financial gain, they tend to make riskier investments. Has this ever happened to you? If yes, can you explain and give an example?

If NO, have you ever observed this behavior in others who trade? If yes, can you describe how it manifests?

**Session IV: Negative Consequences**

Have you ever felt regret or guilt due to excessive trading? Can you explain further?

Have your investments or trading activity caused financial problems for you or your family? If yes, can you explain further?

Have you ever invested more than you could afford to lose?
If yes, how did it happen? Can you explain further?

Has trading activity ever caused you health problems, including stress or anxiety?
Can you explain further?

Would you say that thoughts about past trading experiences or expectations related to future investments are—or have been—a part of your daily life?
If YES, can you explain how far this goes? Does it feel excessive? What are the consequences?

Briefly, in your opinion, what psychological resources help a person become a successful trader?