Narrative as a sensemaking heuristic: evidence from individual investors and their brokers


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1. Introduction

In this study, we discuss why and how narratives of market actors can be used as one of the means to study cognitive heuristics and biases in financial markets. Our approach comes from a position in human sciences that the narrative mode of knowing and explanation is the most salient mode of knowing and explanation among humans (Sarbin 1986, Bruner 1986, Polkinghorne, 1988, Tilly 1998, Akerlof and Shiller 2009). Starting with this, we aim to complement the extant literature on cognitive heuristics and biases from psychology and behavioural finance. Our argument is two-fold. Firstly, we believe that market actors generally create meanings about market-related events and actions in a story mode. This means that market actors do not always necessarily think in a paradigmatic way, which implies invoking only universal laws and/or logic to explain events/actions as their mechanical manifestations, irrespective of temporal factors. Rather, market actors would put events and actions that they observe and experience in a non-random sequential order that intimates their perceptions on causality and temporality. As a result of this, market actors, unlike what is assumed by modern finance theory, might not always reflect their understanding of events/actions in the form of Bayesian updating of the future probabilities attached to different courses of actions and outcomes that are relevant to their expected utility (De Bondt, 2005). Secondly and partly related to the assumed prevalence of story mode in market actors’ cognition, we believe that some of the cognitive heuristics and biases will be socially, materially and historically embedded rather than universally latent in human mind. What we mean by the embeddedness of cognition is that market actors make sense of markets in a way that is moulded by their ongoing market-based experiences and social relationships and by the narratives they generate to construct and maintain the meanings of these. From material perspective, their cognition is assisted and shaped by technologies of representation and calculation that market actors use, such as computers, valuation tools, and so on.

By combining these two arguments about embeddedness and narrative as a cognition apparatus, we expect that some cognitive heuristics and biases would be associated with a financial market’s historical and institutional characteristics, and that we can explore and explain both these endemic heuristics and the factors in which they are embedded by a range of qualitative methods. These methods are direct observation or document analysis to capture market actors’ narratives; analyzing these narratives to identify the embedded cognitive frames and interpretive templates, and scripts for action latent in them; and using secondary sources and interviews with market actors to explore from a historical perspective how these cognitive schemata have come to make sense of markets.

In the following, we first look at the behavioural finance literature on cognitive heuristics and biases and relate some specific calls for a sociological analysis in this literature to a sociological discussion on the institutional generation and maintenance of social knowledge. In the light of this discussion, we
explan the theoretical and methodological contours of what can be called a narrative approach to studying cognition in financial market. In the final section, we demonstrate an application of this approach in the case of individual investors and their brokers at the Istanbul Stock Exchange (ISE).

2. Cognitive Heuristics and Biases: what we know and what we don’t know

Starting with the bounded rationality assumption of Herbert Simon (1955) based on several factors such as information availability and the time and costs associated with optimizing decisions, the psychological and behavioural explanations of individual cognition and decision making have undermined the expected utility and Bayesian updating framework of rational choice theory. Tversky and Kahneman (1974) studied the effects of uncertainty on human cognition and decision making and found out that under such circumstances when people were asked to make a judgement, they resorted to cognitive heuristics, such as representativeness (formation of beliefs that violate statistical rules), availability (of information and its salience), and adjustment and anchoring (in relation to arbitrary reference points), to interpret the available information that was generally insufficient to sensitize people to statistical properties of the given situation and to make judgements accordingly. Therefore, these biases and decisions errors happened in the usage of these heuristics.

Kahneman and Tversky (1979, 1981) then looked at evidence on how, under full information on gains/losses and their probability, decision-makers acted in ways that violated several tenets of the expected utility theory. These tenets are the centrality of the overall wealth situation in decisions, the determination of the utility of a prospect by aggregating the probability-based outcomes of that prospect, and risk aversion (Kahneman and Tversky, 1979, 263-4). To explain these violations, Kahneman and Tversky (1979, 271) theorized that individuals first reframe the given prospects into simpler terms of gains or losses in reference to neutral point that can be partly affected by formulation of the situation. They then evaluate the outcomes by generating and attaching them decision weights that ‘do not coincide with stated probabilities’ (274). Kahneman and Tversky (1981) refer to these processes as “decision frame” and argue that decision frame is partly controlled by ‘the norms, habits and personal characteristic of the decision maker’ (453).

Following these groundbreaking studies, behavioural finance has emerged as a meaningful challenge to the rational actor-efficient market framework of modern finance theory. As authoritative reviews of the field have noted (Hirshleifer 2001, Daniel et al 2003, Barberis and Thaler 2003, DeBondt et al 2008), there are institutional and market-exchange based limits to arbitrage, which is put forward by modern finance as one of the explanations why mispricing -if ever occurs- always disappears. As the cause of mispricing and more generally long-running aggregate abnormalities in asset returns not expected by modern finance theory, behaviour finance literature points to individual sources of
decision-errors or biases, such as cognitive heuristics, self-deception, and emotions, and to Kahneman and Tversky's theory on our preferences.

From a methodological perspective, one common feature among the reviewed studies in the above surveys is the way they use aggregate market data. This can be described as deductive because asset pricing models of modern finance theory or models informed by rational expectations theory are used to detect anomalies in aggregate market data. These anomalies are subsequently explained by what Barberis and Thaler (2003) call ‘stories’ about what might have actually happened. Naturally these stories are informed by the behavioural theories associated with beliefs and preferences discussed above. When it comes to the detection and explanation of behavioural patterns among different groups of investors, such as females, college graduates, etc. (Barberis and Thaler 2003:1099), a similar deductive approach is used in case studies to explain these patterns. One can therefore argue that the psychological theories and explanations on human beliefs and preference formation constitute the explanatory sources by which behavioural finance scholars deductively explain individual and market level anomalies.

Partly because of this deductive approach and its limitations on our imaginations about financial markets, two of the surveys studied above (Hirshleifer 2001, De Bondt et al 2008) and several studies to which they refer (e.g. Shiller 1984) call for a specific research agenda. This research agenda is complementary to the deductive approaches to the state and effects of individual beliefs, psychology and preferences. It concerns what can be broadly stated as the study of the effects of sociological factors on individual and market level outcomes. For instance, in both Shiller (1984) and Hirshleifer (2001), we see a call for specific focus on how social dynamics or processes are involved in belief and preference formation, and in their diffusion and disappearance, and how these might have been affecting market outcomes. Shiller (1984, 461) specifically refers to ‘capricious fashion’ to point to the collective beliefs and associated practices in financial markets that are not necessarily explainable by strict scientific, logical or practical reasoning, such as the rational expectations. In the foundation of Shiller's call lay the assumptions that investing is a social activity and that human beings make decisions not in isolation and hence are susceptible to social dynamics, fads and fashion regarding thinking and acting in financial markets. Akerlof and Shiller (2009, 55-6) point to the social fact generating potential of shared stories - “overexplanations”, as they call them, to refer to attaching too much meaning to seemingly random events. They cite arguments in Shiller’s *Irrational Exuberance* (1994 and other versions) about the investor confidence boosting stories leading to the dot.com bubble of the last decade. Akerlof and Shiller (2009, 56) also point to the potential of stories spreading like an epidemic and having a vast impact on people’s mode of thinking, confidence and pessimism over a sustained period of time.
A more sociologically informed call comes from De Bondt et al (2008). They argue that we should attempt to conceptualize reality and individual actors in the context of financial markets and societies, as social constructions. As they put it, such a conceptualization means studying ‘the tangible content of people’s thought processes... [in] reference to social, cultural and historical factors’. In De Bondt et al’s (2008, 9-10) understanding, meanings people generate about ‘their motives, outlook, self-image’, and hence actions are not merely individual-psychological and isolated. They happen in socio-cultural and historical processes which generate role structures and associated expectations from the enactment of these roles. Similar to Shiller (1984) but possibly further associated with these roles and norms, De Bondt et al (2008, 10) refer to those collective beliefs and practices in financial markets and economy by using the phrases ‘intuitive economic stories’ and ‘economic arguments’ that can explain why we see certain persistent patterns related to investment and consumption in different markets and economies. Against the general assumption of individual rationality and efficient outcomes, De Bondt et al (2008: 10) also point to ‘organisation’ and ‘technology’ as both action and institution in reducing uncertainty, introducing standards, rules and regulations, and generally improving our welfare in society. As for technology, DeBondt et al (2010, 10) get more specific and note the technology's role in assisting human cognition and helping create labour specializations in society, such as the emergence of professional experts.

3. A sociology of financial market knowledge

So far, we have seen references by behavioural finance scholars to the notion of collective ideas and practices as possible and rather unexplored forces behind individual beliefs and preferences, and market outcomes. More theoretically, we have also seen the notion of reality and individual actor as social constructions, which points to social roles and norms as structuring our thoughts and action in society. Moreover, organisation and technology have been discussed as other forces that shape and assist cognition and market action. These references to a number of sociological factors in behavioural finance literature actually intimates a sociology of financial market knowledge that would understand market actors’ individual actions as habitual manifestations of socially objectified and individually internalized reality (Berger and Luckmann 1968). Such an understanding necessitates an approach to studying cognition and decision-making in financial markets that goes beyond explaining individual and market outcomes deductively by cognitive heuristics and psychological theories on beliefs and preferences. After all, in a social constructivist perspective on social phenomenon, such as financial market trading, researchers are interested in processes by which historical and contingent social phenomenon are objectified and institutionalized as social reality. Berger and Luckman (1966) argue that this process is marked by shared typifications of habitualized situations, actions, and by actors who perform roles and observe norms associated with these typified roles and situations. Language in
this perspective becomes the generator and the source of social stock of knowledge endemic to social phenomenon in question. It organizes our experience by the readily available typifications it contains and conveys regarding roles, norms, and situations. In this vein, language objectifies social experience and presents it within institutional terms. As a manifestation of the central role of meaning and language in the institutionalization of human experience, Berger and Luckmann (1968: 55-6) use the term 'semantic fields' to refer to the sum of objectifications related to specific social phenomenon, such as stock market activity.

We can therefore understand market actors’ narratives and discursive accounts on their and others’ activities in the market as part of this semantic and institutional field. Narratives and discursive accounts objectify historical and contingent features of a market as social facts. However, a social constructivist approach to financial markets would expect to find among market actors a spectrum of common to divergent meanings or social facts. This owes to the complexity of contemporary financial markets in terms of roles, norms, products, rules, geographical spread and so on, all which imply possible differences in market experience. Another factor behind this expectation against a total socialization of all actors into a unitary objectified reality of financial markets is the following possibility. Market actors can internalize, in objectified and/or strategic manner, different types of pre-scientific and scientific theories on how financial markets work (Smith 1998, MacKenzie and Millo 2003, Preda 2007).

This type of common to divergent meanings about financial markets is also applicable to other groups in society, such as social scientists who are engaged in professional study of social phenomenon at theoretical and/or empirical level, and to general public. Relevance of an institution, such as financial markets, to individuals’ professional and social life therefore emerges as a factor that shapes how individuals relate to and are socialized into this institution and its stock of social knowledge. Moreover, as noted by Berger and Luckmann (1966), institutions are not static and closed to change. They emerge and change in historical perspective with reference to intra and inter-generational relationships and inter-institutional dynamics, e.g. between financial markets and politics.

How can this conceptual framework be associated with individual market actors’ experience with cognition and decision-making in financial markets? Where does narrative feature in this? Following Berger and Luckmann (1966), we can argue that individual market actors, whether objectively or strategically, experience the institutional aspects of stock market activity in an internalized and embodied manner. This means that it is individuals’ performances of roles, such as investor, broker, trader, where institutions manifest themselves as social reality. Although there are written rules and regulations for market actors, these can be seen as secondary method of social control. This is because internalized institutionalized norms and roles and the knowledge associated with them narrow down
possible ways of acting and reasoning for members of a social group. Performance of roles and observation of norms therefore help reify and maintain the objectified social reality. Language in conversation and social interaction is another essential way by which social reality is reified and maintained according to Berger and Luckmann (1966, 172). Although conversations and interactions are argued to become “causal” owing to the internalized social reality, they nevertheless can undermine and change parts or the whole of this reality as it starts to be weakened by different social structural or field specific factors.

These points bring us to narratives of market actors and how they are connected with the social construction of financial market reality. Although narrative as a form of discourse is not the only mode by which we generate written and oral discourse, example of other forms include argument, exposition, and description, among others (Smith 2003), putting our experiences into narrative form is seen by cognitive psychologists as the most salient mode of knowing and explanation for human beings (Herman 2003, Polkinghorne 1988, Bruner 1986, Sarbin 1986). Narrative mode simply refers to making sense of our experiences by putting actions and events in temporal and causal order. This means that narratives generate meaning by going beyond a mere chronology of events and actions and by plotting them together in a way that reveals how these are perceived to be contributing to the outcome under explanation. Narrative mode, which is generally contrasted with the logico-scientific mode- i.e. deducing explanations for events and actions from logic, universal truths, and scientific theories, does not necessarily mean that meanings are generated arbitrarily in narratives. Not only might narratives draw on the logico-scientific mode, but also they are subjected to audience effect and intertextuality (Boje 2000). Audience effect means that narratives are told for specific purposes for specific audiences, which might consistently shape their content, mode of delivery, and plots (Tilly 2006). Intertextuality on the other hand refers to cross-references to other narratives that recount past experience, meaning that narratives thrive on on-going experiences and past stories (Boje 2000). These two factors in narrative mode are intimately associated with typifications of actors, actions and situations that are central to social construction of reality and knowledge. Narratives therefore thrive on and contribute to these typifications and reflect the historically sedimented and continuously reified and modified knowledge. More specifically, they enrich the content of these typifications or ‘frames’ by contributing to interpretive templates or explanations about framed actions, events, and situations (Czarniawska 2008, 36). As said before, although narratives are not the only source of cognitive schemata, their salience in daily life and organisational settings (Weick 1995, Czarniawska 2004) and the way they allow access into how we make sense of our social reality mean that they can be studied to understand both the process and content of this reality.
By accessing this reality endemic to a financial market by means of sustained observation of market actors in their natural settings, we might start encountering their cognitive heuristics and biases that are present in their cognitive outputs, such as oral and written discourses. These observations should ideally last until the collected data reaches saturation, namely new inputs into the data become repetitive (Atkinson and Hammersely 2007). There are then two associated methods for analysis of narratives that would help researchers to identify more abstracted aspects of the social knowledge in this market, namely frames and interpretive templates. These are the analysis of plot structures, i.e. the specific order of sequencing in narratives, and the analysis of narrative elements, namely events and actors that are attributed causal and intentional capacities respectively (Czarniawska 2008, 35-7). Once frames and interpretive templates are identified in the narrative data, researchers can then explore how these cognitive outputs are associated with the institutional dynamics of the social knowledge and reality in this market. This can be achieved by conducting interviews with market actors and analysing the historical development and current circumstances of the market in question. In the following section, we discuss the findings from the research conducted by the author on brokers of individual investors in the Istanbul Stock Exchange between 2008 and 2009.

4. Stories from the Istanbul Stock Exchange

The Istanbul Stock Exchange, the only organized equity market in Turkey was opened in 1986. In 1989, foreign investors were allowed to invest in the ISE. In 1995, the ISE became a fully automated equity market. With the full automation, more and more brokerage firms combined their telephone dealing platforms with online platforms for individual and institutional investors. However it was in late 2001 when the ISE established a remote access system by which dealers and investors alike could send direct orders via brokerage firms’ online trading platforms. This undermined the importance of the ISE's trading floor and floor brokers. Since the ISE's opening, the equity market has been a continuous multiple price auction market where investors' orders are matched in time and price priority.

There are four types of investors in the ISE based on domicile and legal status. These are Turkish retail, Turkish institutional, foreign retail and foreign institutional investors. In the first decade of the ISE, probably owing to the manual mode of trading and data collection, the publicly available information on these investors types had not been as detailed and easily accessed as they have been in the post-automation of 2001. The Turkish Capital Markets Intermediary Institutions Association (TIA) since its foundation in 2002 have been publishing annual reports on these investors' equity market activities among other topics.¹ These analyses stretch back to 1999. On the other hand, some local data

¹ The reports are in Turkish however there are summary reports in English on the TIA website. The URL where all these reports can be retrieved dating back to 2002 is http://www.tspakb.org.tr/tr/
vendors and secondary resources (Yildirim 1995, 1996) provide patchy figures on some of these investor types' trading and investment preferences, which stretch back to the beginning of 1990s. These sources together point to several interesting numerical figures about an average Turkish retail investor in historical perspective. These are: he/she has been a short-term investor with average portfolio holding periods of several weeks. He/she has provided the bulk of liquidity in the ISE by consistently generating more than half of the annual trading volume over the years. Concomitantly, his/her share in the total market value of the shares traded in the ISE have been decimated over the years and taken over by institutional investors, most being foreigners. On a similar note, according to the World Bank figures on stock market turnover rates, i.e. the ratio between the total trading volume and total market capitalization, which indicates how often shares change hands, the ISE has been historically a high turnover country compared to relevant regional turnover averages in the world (WB, 2012).

While these numerical figures give us some manifestations of the socially constructed reality by and of the Turkish retail individual investors and their brokers, my field research in Istanbul on them have elucidated some of the cognitive and historical-institutional processes behind these manifestations. According to the TIA figures for 2009, almost a third of the approximately one million Turkish retail investors reside in Istanbul and they own two-thirds of the market value of shares owned by the Turkish retail investors. Incidentally, almost all the 89 brokerage firms active in the ISE by the time of my research were head-quartered in Istanbul. I made my observations in the Istanbul headquarters of three brokerage firms (Firms A and B in February and March 2008, Firm D in May 2008) where investment advisers, who worked as employees of retail sales departments, served relatively higher wealth and/or higher frequency retail clients of each firm. These brokerage firms had around 50,000 Turkish retail investors as clients all around Turkey. However the investment advisers I directly observed in four different trading floors (two from Firm A) served around 1,000 clients who constituted the very core of these firms’ client portfolio. These clients mostly invested in the ISE equities but a small minority of them (almost all from Firm A) traded frequently in the ISE futures contracts. In total, the retail sales departments of all three firms generated around 4.5 per cent of the annual trading volume in the ISE in 2008 and 2009. I stayed in each firm around two weeks to do direct observations and conduct interviews. To record the naturally occurring conversations among

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2 The findings reported here are from my PhD research on sensemaking and narratives in financial markets completed in 2011.

3 In the brokerage sector in Turkey, there is usually a minimum threshold an investor has to commit to the specific brokerage firm to be able to get the services of headquarters investment advisers, a service that is more personalized and comprehensive than online and execution only service via telephone dealers. This minimum amount varies from house to house and the frequency of trading on the part of an investor. In the brokerage firms that I observed, the figure was generally more than 50,000 TL, which according to the TIA figures for 2009 puts an investor within an approximately 175,000 strong Turkish retail investor group who commit between 10,000 TL and 1 million TL to investing in the ISE. The bulk of the brokerage house revenues (above 70 per cent on average since 2003 according to the TIA figures) come from fees on client transactions and loans.
floor staff, I used a notebook and sometimes a voice recorder wherever it was permitted. I complemented my observations with informal discussions with my interlocutors and formal interviews with senior staff overseeing each firm’s operation. To find out about the state of retail investor activity in other brokerage firms, I also interviewed investment advisers and senior staff from six leading brokerage firms, and managers from the ISE overseeing the equity market operations, and several Turkish retail investors who have significant weight in parts and the whole of daily trading in the ISE.

The observation-based data were analyzed to identify narratives within. This was done according to an operationalized definition of sensemaking narratives in financial markets. Sensemaking narratives are discourses beyond a sentence by which narrator connects two or more clauses together for retrospective and/or prospective explanation and prediction. To distinguish among the recurring plot structures in the collected narratives, I introduced four plot logics that reflected the spectrum of reasoning I encountered in the field data. These are “cause-effect”, “correlation”, “randomness”, and “proto-story”. As discussed before, establishing cause-effect relationship between events and actions within a temporal frame are foundational to narrative reasoning. Correlation logic in my interlocutors’ narratives emerged in the form of perceiving correlative relationships among stock market indexes, generally across equity and futures markets abroad and in Turkey. Randomness logic is about interpretive moments when my interlocutors failed to make sense of the events and actions they observed in a meaningful manner and made their puzzlement clear in their narrative. Proto-story refers to narratives in which my interlocutors’ explanations fell short of invoking one of the logics and simply sequenced events and actions without connecting them meaningfully. Within the data, I also encountered narratives in which a past market outcome was invoked, generally in full, to point to the “similarity” between it and the current situation. The explicit reasoning was that because of the similarity, the current situation should resolve like the way the past situation did. I classified such stories under “similarity” logic. Another significant part of my analysis was classifying actors and phenomena that frequently featured in the narrative data. Here the aim was to link the plot logics with local and international actors and phenomenon in order to be able to figure out the frames and interpretive templates of my interlocutors. Last but not least, I identified the following in each narrative, information source (direct news, market-data, private information), temporal orientation of narratives, teller-audience, and rhetorical tropes such as metaphor, personification of non-human phenomena, and so on.

4I was not allowed to access telephone conversations between investment advisers and clients on anonymity and technical difficulty grounds but I overheard a few conversations as such when a speaker phone was used. Because trading floors were relatively small and populated by 6 to 9 investment advisers, it was easier for me to follow most of the conversations and note these down contemporaneously without having to rely on a voice recorder. However it should be stated here that my field notes do not contain all the things that had been said in the trading room. I focussed on those conversations about market events and actions.
5. Findings

The table below present the total number of narratives identified in each of the four trading room directly observed. These narratives are classified according to some of the above discussed categories.

Table 1: Narratives captured during field work

<table>
<thead>
<tr>
<th>Firm</th>
<th>Cause – effect</th>
<th>Correlation</th>
<th>Proto-story</th>
<th>Randomness</th>
<th>Similarity</th>
<th>Total</th>
<th>Proxy data use</th>
<th>New + private knowledge</th>
<th>Self-narrative</th>
<th>Past</th>
<th>Past and Present</th>
<th>Present</th>
<th>Present and future</th>
<th>Future</th>
<th>Past, present, and future</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQ (8,5)</td>
<td>120</td>
<td>22</td>
<td>139</td>
<td>11</td>
<td>1</td>
<td>293</td>
<td>81-6</td>
<td>39</td>
<td>34</td>
<td>65</td>
<td>73</td>
<td>62</td>
<td>12</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>BR (3,5)</td>
<td>47</td>
<td>3</td>
<td>42</td>
<td>1</td>
<td>1</td>
<td>94</td>
<td>62</td>
<td>18-19</td>
<td>21</td>
<td>8</td>
<td>15</td>
<td>28</td>
<td>29</td>
<td>-</td>
<td>14</td>
</tr>
<tr>
<td>Firm B</td>
<td>56</td>
<td>16</td>
<td>48</td>
<td>5</td>
<td>3</td>
<td>128</td>
<td>107</td>
<td>39-5</td>
<td>22</td>
<td>5</td>
<td>17</td>
<td>40</td>
<td>38</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>HQ (7)</td>
<td>42</td>
<td>3</td>
<td>35</td>
<td>2</td>
<td>1</td>
<td>83</td>
<td>82</td>
<td>35-1</td>
<td>2</td>
<td>3</td>
<td>31</td>
<td>13</td>
<td>15</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>Firm D</td>
<td>265</td>
<td>44</td>
<td>264</td>
<td>19</td>
<td>6</td>
<td>598</td>
<td>517</td>
<td>173-31</td>
<td>84</td>
<td>50</td>
<td>128</td>
<td>154</td>
<td>144</td>
<td>20</td>
<td>102</td>
</tr>
</tbody>
</table>

HQ: Headquarters, BR: branch, numbers in parentheses refer to exact duration of observation in each site.

Before discussing the findings, it is important to describe the technological and organisational circumstances in which the observed investment advisers narrated the market events and actions. Investment advisers relied on a computer and multiple screens to follow the news and data flows on the ISE and other markets. These computers were powered by standardized software provided by local data vendors for data transmission, presentation and analysis, such as chart analysis, and for order logging and execution. Investment advisers used telephones (with headsets) to communicate with their clients. In all the trading rooms, with the exception of Firm A’s branch, there was the presence of one or more analysts on companies and/or economy, either in person or via telephone or email. As discussed in detail in Cetina and Preda (2007), the software investment advisers used constituted an important element in “scopic market system”, an example of which is the ISE.

Scopic here refers to both suffix “scope” used to describe observation devices, such as telescope, and scope’s other meaning, i.e. to look at or examine carefully (Dictionary.com). The contemporary mode of representation and observation in financial markets is scopic. Computer screens and the interconnected systems of data collection, processing and transmission constitute the device by which market actors carefully examine unfolding events and actions with ‘intensity and preparedness’ and participate in the market activity (Cetina and Preda, 2007:132, also Zaloom, 2006 for a vivid description as such on futures market traders in London). As discussed by Cetina and Preda (2007),
most important components of the scopic market systems, such as the presentation of individual data streams (price, trading volume, news, etc.), order matching, and conversation channels for traders, work in a sequential flow mode, i.e. piece by piece and processed/disseminated at particular moments in time. Owing to the contemporaneous representation of multiple data streams, Cetina and Preda (2007, 132) describe market actors' observation and cognitive mode before the screens as one of moving around individual streams, and following and anticipating the flows within, which is 'grounded more in a structure of feeling rather than in modes of calculation'.

These conceptual descriptions pretty much captured what the investor advisers, whom I observed, were doing before their computer screens. It was observed that investment advisers gave their constant attention to the screen with eye movements and sometimes slight tilts of head to focus on a specific part of the screen. They also used their computer mouse and keyboard to log in client orders and retrieve more in-depth and/or historical data, and analysis functions, such as charts. As an external calculation tool, many used a table calculator to do rudimentary calculations. Many more complex calculations on client accounts, different ratios on companies' performances, indexes, and so on, were generated by the software on their computer. This technological assistance freed up investment advisers' time. Investment advisers frequently conversed with their clients, especially with those whom traded on a daily basis. During these conversations, investment advisers explained what had been going on in the markets and what to expect in the coming minutes, hours and days. Investment advisers also conversed among themselves and with analysts, generally after a reaction by an investment advisor or an analyst to something happening on the screen. At times their out loud reactions to screen events were not followed up by their colleagues. The narratives captured during observations came from these collective and individual sensemaking efforts to understand the connections between events and actions and/or predict their future course.

As discussed before, the observations were made in February and March 2008 and in May 2009 in four different sites. After carefully analysing the observation data, narratives were identified according to the operationalized definition. What are the major findings from this analysis? To begin with, in all the four sites, investment advisers framed the ISE as an emerging market that should move in tandem with more developed markets and indexes of the world, such as the Deutsche Aktirien Index (DAX) in Germany, the Dow Jones Industrial (DJI) in the USA. Thanks to the geographical location of Istanbul, these indexes overlapped with the ISE in trading hours to varying degrees. The biggest overlap happened between the ISE and the DAX. To give an example of a narrative that invoked this frame and the associated interpretive template, on my very first day of observation in the field (19 February 2008), at Firm A headquarters, I witnessed and recorded the following conversation while I was sitting
between the strategist Ahmet and an investment advisor, Mehmet, and directly overseeing another investment advisor, Hakan, and his screen (names are pseudonyms):

Hakan: What is the deal behind Germany [the DAX spot and futures indexes]?
Ahmet has a glance at his double screen and says: “It is profit realization!”
Mehmet in a tongue in cheek manner: “Does everything have to happen for a reason?”
Hakan responds “then the guy [his client] is asking on the phone and I have nothing to say!

This conversation attests to the several points made before and intimates some other regularities about cognition in scopic market systems and the ISE. To begin with, we see a very short narrative here that explains “the deal behind Germany” by attributing motive to anonymous investors in the German stock market of realizing their profits. One event directly observed on the screen is plotted with an action that is observed via proxy figure (falling index value) and assumed to be happening. Hakan, after getting the response, does not react to the explanation, along the lines of “what profit?” or “whose profit?” Here all the narrators share an ongoing market experience or the intertextuality, which allow them to link the past situation with the present. Also there is the unspoken reason or shared frame as to why brokers in Istanbul, whose clients do not invest in the DAX, have to worry about the German stock market.

One might object to my interpretation here on the intertextuality because of Mehmet’s reaction to this narrative, which seems to undermine the explanation itself and the whole notion of making sense of the markets. However, as the day unfolded, Mehmet generated stories similar to “the profit realization” story, explaining what was happening abroad and connecting it to market movements in Istanbul. Mehmet did so whilst he was conversing with others in the room and his handful of high frequency trading clients. Mehmet’s initial reaction to Hakan was more about the usual banter in the trading room, which I was to witness time and again. Whether it was objectively or strategically internalized, the frame that placed the ISE as an integral part of a network of stock markets around the world, was a shared one in this trading room. Over the course of my observation in Firm A headquarters, out of the 293 narratives collected, 54 % of these narratives invoked this frame directly or indirectly within all the plot logics discussed before. From an interpretive perspective, some of these narratives mentioned the ISE directly at the receiving end of a news or market event abroad, generally from the US, and Germany, and to a lesser extent from powerful emerging markets, such as Russia and Brazil. They then explained and/or predicted the ISE related event/action accordingly. Some narratives, like the one above, implied that events and actions from abroad was relevant to the ISE without making this explicit.

In Firm A’s branch, I observed an investment advisor and three Turkish retail investors for several days. In this branch, the frame discussed above was invoked in 23 % of the narratives. From the
narratives told in this room and from my discussions with the residents of the room, it became apparent that they were rather critical of the frame as a trading strategy but internalized it strategically in their trading of ISE shares. One of the investors in the room said the following when I asked him what he thought of the frame invoked frequently in the headquarters trading room “they [investment advisers] are like parrots you know, “the DAX is up, the DAX took off”, it means nothing, we look at the fundamentals [of company performance] here” (Informal discussion 5 March 2009). Indeed these three investors and the investment advisor were much more interested in news and data flows on those ISE shares on their radar. Nevertheless, most of these shares were not as liquid as the major index shares, such as banks and major industrial companies, which were more exposed to the effects of the frame. That was probably one of the major reasons why my interlocutors in the branch resorted to what I call private knowledge more often than other investment advisers I observed in other sites. This type of knowledge generally concerned which powerful retail investors and groups were doing what in less liquid shares and it was not available on data platforms. It was acquired from social networks in which my interlocutors took part. In other sites, private knowledge use was resorted to make better sense of some figures on the screens rather than as a trading strategy. Generally, the residents of the branch invoked the frame discussed above to explain the ISE’s index movements in their conversations in the room and with their contacts on the telephone. Yet, the frame was not turned into a trading strategy owing to the branch residents’ preferences to invest in a particular type of ISE shares discussed above.

In Firm B and D, the frame was almost equally ubiquitous with 48.5% of the narratives captured in Firm B, and 42% of the narratives in Firm D. In both sites, there were the presence, via emails and telephone connection, of strong research teams composed of macroeconomic and sector analysts, and trading strategists for individual investors. Unlike Firm A’s smaller research team composed of three staff, these larger teams were formed foremost for the institutional investor clients who were served by these two firms’ institutional sales departments. The trading and strategy calls of the research departments were generally translated by the strategist of each firm. This meant that the strategists would combine these professional and generally longer-term investment calls with chart analysis and make them more suitable for the short-term investment preference of their Turkish retail clients. From an organisational perspective, the main difference between Firm A and the other two Firms were the strength of their research teams and their clients’ preferences. The Firm A’s clients whom were served via the headquarters were selected from Turkish retail investors who preferred as a speculative investment tool for both upward and downward markets, the higher liquidity ISE futures contracts to the relatively slower and hard-to-short ISE spot market. In Firm B and D, the use of the ISE futures for such a speculative purpose was quite rare by their clients as it was both firms’ strategy to limit their existing headquarters clients’ exposures to the ISE futures’ market. In both firms, the ISE futures
market, which was opened in 2006, was seen as too volatile and risky for the long-term viability of
their equity clients. Nor were their clients urged to use the ISE futures contracts for hedging their
equity exposures in the ISE spot market. Instead Firm B and D clients were generally encouraged to
act like long-only investors but with a short-term investment horizon in some 80 ISE companies
covered by their research teams. The ISE on the other hand had more than 300 quoted companies,
majority of which were not deemed worthy enough to cover by leading brokerage firms like B and D
and their research teams serving institutional investors in Turkey and abroad.

As discussed above, there were similarities and differences in organisational positions and strengths of
each brokerage firm. Despite the differences, the frame which positioned the ISE as part of a global
system of financial markets was shared in all the four sites. This was irrespective of whether one
internalized this frame strategically or objectively. This frame was also an enduring one. One year
after finishing my observations in Firm B, I started my observation in Firm D and I immediately
recognized the frame and the associated interpretive template in action there. Although the global
market conditions were different in March 2008 (the eve of an economic and financial meltdown) and
May 2009 (offsprints of recovery in the collapsed global financial and economic systems), the ISE was
still at the receiving end of any economic and financial event abroad. As part of my research I also
made observations in two institutional sales departments, one in a fourth firm in July-August 2008,
and one in Firm D in May 2009, and in an asset management company in April 2008. In these sites,
the frame was also invoked, although seemingly more strategically to cope with the ISE’s daily trading
dynamics rather than as an investment strategy to be used or shared with institutional clients. During
my interviews with employees of other brokerage firms and with Turkish retail investors, this frame
and the associated template were acknowledged as an important explanatory factor for the ISE’s
movements. For an outside observer like me, it was not easy to ignore the ubiquity of this frame and
the associated template in written and oral commentary on data platforms, brokerage firm websites,
and financial news portals, business TV channels, and so on. Some of my interlocutors joked about the
ubiquity of the frame in pointing to the internalization of this frame among the members of general
public who were interested in the ISE. A senior manager in a leading brokerage firm made the
following remark (Interview 1 September 2008):

10 years ago, the market would rally with [rumours about] what leading local investors were doing,
now the shopkeeper in Afyon [a small Anatolian city] asks about the future of Tom [DOW] Jones [we
both laugh and he adds this really happened], then you hear in a village in Kars [an Eastern province
bordering Iran and Armenia] ‘what will the FED do’ [this was a joke]. Now people [retail investors]
look for a story, a justification before they trade [in contrast to just following influential local figures].

I asked my interlocutors in the four sites and beyond about the historical and logical reasons behind
this frame and the associated interpretive template. The answers varied. Many referred to the resurgent
presence of foreign institutional investors in the ISE in the new millennium, which they believed had made the ISE a globalized market and more open to the vagaries of global economic and financial events. They contrasted this situation with the 1990s when they believed the ISE was most of the time moved by local economic, political and financial actors and events. Few got more specific about underlying economic factors and pointed at the Turkish economy's export links with developed economies, such as Germany. Many also referred to the deteriorating global economic and market conditions since 2007, which they believed became associated with local investors’ and brokers’ concerns about what the foreign institutional investors in the ISE would do in the face of these conditions. Some on the other hand just dismissed the objectivity of the frame and the associated interpretive template as exemplified in the “parrot” quote.

Yet for all my interlocutors in the four sites, the frame and the template was, to use Tversky and Kahneman's (1974) term, constituted a significant “anchor” by which they made sense of the unfolding market events and actions both abroad and in the ISE, and predicted the latter. In line with what Cetina and Preda (2007) describe, this cognitive activity was not grounded in a mode of calculation. I did not observe any of my interlocutors, including research analysts, using or planning to develop any scientific or practitioner econometric model to quantify and measure global and local variables and effects associated with this frame. Instead, the frame and the associated template had been underpinned by a number of historical events for the ISE. They were also kept reified and internalized by the ongoing narrative and discursive explanations of daily market events and actions from abroad and Turkey. The investment advisers whom I observed therefore made a continuous effort to follow the news and data flows from abroad. They tried to have a constant cognitive tab on these market movers in places far away from Istanbul and Turkey to make sense of the ISE’s movements. For them, this had become part of their role as investment advisers and the scopic market technology had allowed them to do this on a minute basis.

6. Conclusion

In this paper, we have discussed the sociological factors that might underpin individual market actors' cognition and decision-making. Institutionalized and internalized roles, norms, and the social stock of knowledge in a financial market imply that individual psychological factors are not the only reason behind decision heuristics and errors. Professional market actors and investors alike construct, maintain, modify and socialize into this social stock of knowledge and the roles and norms springing from it. As pointed out by behavioural finance scholars, this social stock of knowledge may manifest itself in the form of fads and fashions or intuitive economic stories or arguments that spread like an epidemic and persist for some time. As we have discussed in the case of the ISE, the recent story has been about the ISE's changing status in the global financial system, as reinforced by the increasing
presence of foreign institutional investors in share ownership and, to lesser extent, in trading volume in the ISE. This story does not have only one plot. There are different interpretations, evidence, and actors featuring in my interlocutors' arguments about the “globalized ISE” anchor. Despite these differences, and whether one internalizes this anchor objectively or strategically, it is an anchor that has been demonstrated, via their narratives, to be influential on investment advisers' and Turkish retail investors' cognition and hence decision-making. Because retail investors have been generating bulk of the liquidity in the ISE, this anchor had to be taken into account by institutional investors and their brokers in the ISE.

There are recent econometric studies on the ISE's co-movement and return integration with developed and emerging country markets. For instance, Berument et al (2011) have found out that between 2000 and 2010, there has been a strong one-way correlation between unexpected shocks in various US indexes, but foremost among them, the DJI (which my interlocutors carefully followed), and the movements of the ISE 30 (blue chip index) and other ISE indexes. According to Berument et al (2011) the effects of individual shocks from the US on the ISE were not just contemporaneous. They also explained seven day period movements of various ISE indexes. Interestingly, Berument et al (2011,89) refer to two US indexes Russell 2000 and the AMEX Composite (two small and medium sized company indexes in the US) as affecting various non-financial ISE indices' movements the most. They speculate that this might be down to American investors' wish to diversify their portfolio across similar markets with small and middle size capitalization markets, and the ISE being one of them. In their study, there is no reference to the Turkish retail investors. In my field notes, there is no single phrase or sentence noted down on the AMEX or the Russell 2000. More dialogue is needed between sociologists and finance scholars to better understand the sociological and behavioural dynamics of investors and professionals in financial markets...

References


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