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Seven ways to knit your portfolio: Is the language of investor communication gender neutral?

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Seven ways to knit your portfolio: Is the language of investor communication gender neutral?

Cecilia Boggio, Elsa Fornero, Henriëtte Prast, José Sanders

Abstract

This study investigates whether (lack of) familiarity with the language of investor communication may contribute to an explanation of the well-documented gender gap in financial decision-making (i.e. women are more risk averse than men) and financial literacy (i.e. women are less literate than men). Using an interdisciplinary framework that combines insights from Behavioral Economics, Finance and Linguistics, we analyze metaphors used in websites that target beginning retail investors in three different languages: Dutch, Italian and English. Employing the conceptual metaphor analysis proposed by Cameron and Low (1999) and Charteris-Black (2004), we find that in all three languages the metaphors come from the same conceptual domains; namely, war, health, physical activity, game, farming and the five senses. As these domains refer to worlds that are predominantly and (stereo)typically masculine, we conclude that the language of investor communication may give rise to feelings of familiarity and belonging among men while creating feelings of distance and non-belonging among women. Based on our findings, we conclude that further research is needed to assess whether language could be a tool to reduce the gender gap in financial attitudes and behavior.

Keywords

1. Introduction

Marketing practice and research find that *words* influence consumers' attitudes and behavior by creating conceptual associations that may have a different impact on men and women. For instance, while women liked Diet Coke (Coca Cola's first ever sugar-free cola) from the moment it entered the market in 1983, the Coca Cola Company persuaded men to consume its zero-calorie cola only with the release of Coca Cola Zero in 2005. The word 'diet' evokes associations with a stereotypical woman's world:

- where she is overly concerned with her looks and physical attractiveness;
- whereas the word 'zero' evokes associations with a stereotypical man's world;
- where he is strong, tough, possesses quantitative skills and is a black and white thinker.

In discussing the concept of gender branding applied to the world of diet beverages, Jill Avery (2012) maintains that, for years, Coca Cola failed to entice men to consume Diet Coke, even though there was a practical need for men to drink lower-calorie soda, as men identified 'diet' cola as a woman's drink, and thus could not bridge the gap image-wise without a new product just for them.

Whereas in the area of non-financial consumer products, gendered branding is common, in the area of financial products it is seldom found. The latter can be explained by several factors. First, the household, not the individual, has traditionally been the relevant unit for saving, investing and insurance decisions. Second, finance theory assumes the presence of a unitary financial consumer (Donni and Chiappori 2011). Finally, the financial industry is required to meet several demands from the law as well as financial supervisors when it comes to providing guidance and suggestions for investors. These demands rarely take financial consumers' biases and heterogeneities into account, other than through asking them about their risk attitudes and financial expertise. Moreover, from the perspective of risk taking and financial participation, both academic research and financial industry studies have well documented that men and women exhibit different financial behavior. It is a fact that women participate less in the stock market than men and, if they do, they take less investment risk.

Starting from these premises, this study, first of all, hypothesizes that language may have a different impact on men and women depending on the metaphors that are used. Then, it investigates the language used in communication with financial consumers in Dutch, English and Italian, and the likelihood of this language to create feelings of belonging or distance depending on whether the consumer is a man or a woman. If that were the case, this language bias could contribute to explaining the gender gap in financial decision-making. In other words, this study wants to be a first step towards a better understanding of the effects of language, and metaphors in particular, on financial attitudes and behavior. And this is not just of academic importance. Far from it. Nowadays, with pension risk increasingly transferred to individuals, increased and increasing labor market participation by women, and a growing need for women to manage their own wealth and take care of their own financial security in retirement (as a result of divorce and reduction of survivors' benefits), the need to understand how to reach women effectively is of great significance, and it has practical relevance not only for policy makers and financial sector supervisors and regulators but also for the financial industry.

2. Theoretical background

The main research question of this study, thus, is whether the language used in the financial sector could contribute to the gender gap in financial attitudes and decision-making. The notion that language, and more specifically metaphor use, could have such an effect is grounded in three main theoretical frameworks; namely, familiarity and investing, affect heuristic, and conceptual metaphor theory.

2.1. Familiarity bias in investing

The behavioural finance scholar Gur Huberman (2001) uses the concept of *familiarity* to explain why investors hold many more stocks of companies they are familiar with, diversifying less than would be optimal according to finance theory. As a matter of fact, the strong and pervasive influence of this so-called home bias on investment decisions takes different forms. There is a home country bias, with investors not diversifying enough internationally (French and Poterba 1991), a regional bias within countries, with investors holding an excessive percentage of their portfolio in stocks of companies operating at a regional and even local level (Coval and Moskowitz 1999; Huberman 2001), an industry bias, with employees overinvesting in stocks of companies in the industry they work in (Døskeland and Hvide 2011), and even an employer bias for pension savings, with employees holding too a large fraction of their pension wealth in their employers' stocks (Laibson 2005). Moreover, Prast *et al.* (2015) study familiarity in the context of the gender difference in stock market participation and risk taking. By assuming that women are more exposed to advertisements in women's magazines than men, they construct a 'pink' stock market index and investigate whether behavior differs according to whether participants are exposed to this pink index or to the traditional stock market index. They find that with the traditional index it takes women three times as long as men to decide, while with the 'pink' index they decide more quickly than men.

2.2. Affect heuristic

The psychological mechanism underlying the effect of familiarity discussed in 2.1. can be found in social and cognitive psychology research and has been defined as the affect heuristic. This psychological phenomenon refers to a sort of mental 'short-cut' that behaves as a first and fast response mechanism in decision-making, no matter the type of decision one has to make.

   In recent years, it has been demonstrated that the affect heuristic plays a role in risk judgment within the decision-making process. Indeed, an inverse relationship between perceived risk and perceived benefit has been observed, and it occurs because people rely on *affect* when judging the risk and benefit of specific hazards. In other words, people act upon their swift and instinctive emotional responses (i.e. affects) in a risky environment, instead of, or in addition to, logical ones. While positive *affect* decreases perceived risk, negative *affect* increases it (Finucane et al. 2000). Specifically in the context of investor decision-making there are at least two additional effects. The first one is that positive (or negative) affect, besides decreasing (or increasing) perceived risk, also leads to a higher (or lower) estimate of return (Slovic *et al.* 2005), even when this is logically not warranted for that given situation. The second effect, as the findings of Alakami and Slovic (1994) and Finucane *et al.* (2000) demonstrate, is that when people feel they are adequately familiar with an investment context, they are willing to gamble with ambiguous probabilities whereas they are not prepared to do so in unfamil-

iar investment contexts (Boyle et al. 2012; Dimmock et al. 2016). Thus, one can conclude that, as far as investment behavior is concerned, familiarity very often creates a positive *affect* that may explain why people often invest in the familiar while ignoring the main principles of portfolio theory.

2.3. Conceptual metaphor theory

It should now be clear that the existing economic research into the role of familiarity in influencing investor behavior focuses on the effect of *physical* closeness. Instead, as previously mentioned, we hypothesize that preference for the *familiar* could manifest itself through language. If words evoke metaphorical associations that create *psychological* closeness, they may have an impact on investor behavior in a similar way as geographical closeness. Drawing on conceptual metaphor theory, we look into the possibility that the language of investor communication creates positive affect through familiarity for one of the genders, but less for the other.

The conceptual theory of metaphors by Lakoff and Johnson (1980) pioneered the notion that metaphors underlie the conceptual systems according to which human beings think and act; metaphors are then the lens through which people view the world around them. The compelling implication follows that every aspect of our experience is molded by metaphors we are hardly aware of and, most important of all, metaphors are lurking in the discourse of all diverse manner of human enterprise. Thus, metaphors are not merely decorative devices, peripheral to language and thought. Rather, they are central to thought. As a matter of fact, language – and metaphors in particular – is what makes our thoughts or conceptual systems 'visible'. Particularly in abstract fields, such as finance, people use, often unconsciously, metaphors to make concepts and actions 'imaginable', more vivid, and thus easier to understand. They do so precisely by transferring meaning from an imaginable domain to an abstract domain (Charteris-Black 2004).

As Figure 1 illustrates, a certain (abstract) domain, i.e. INVESTING, 'borrows' words from a certain (concrete) source domain, WAR, in order to turn the abstract concept or experience into a more concrete, and thus easier to imagine, one. In short, there are two main roles for the conceptual domains posited in conceptual metaphors:

1) *source domain*: the conceptual domain from which we draw metaphorical expressions (e.g. INVESTING IS *WAR*);
2) *target domain*: the conceptual domain that we try to understand (e.g. *INVESTING* IS WAR).

INVESTING IS WAR[1] is an example of conceptual metaphor and may result in

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1 Evidence that INVESTING IS WAR is a discourse-specific conceptual metaphor is given by, for example, the headlines of the following articles: "Sun Tzu, the Art of War and Your Portfolio" (*Financial Post,* 17 August, 2013); "The Art of War and Investing" (*Laissez Faire,* 10 August, 2015); "The Investing War is Over, and the Index Fund Won" (*Fortune,* 1

Figure 1. Structure of a conceptual metaphor
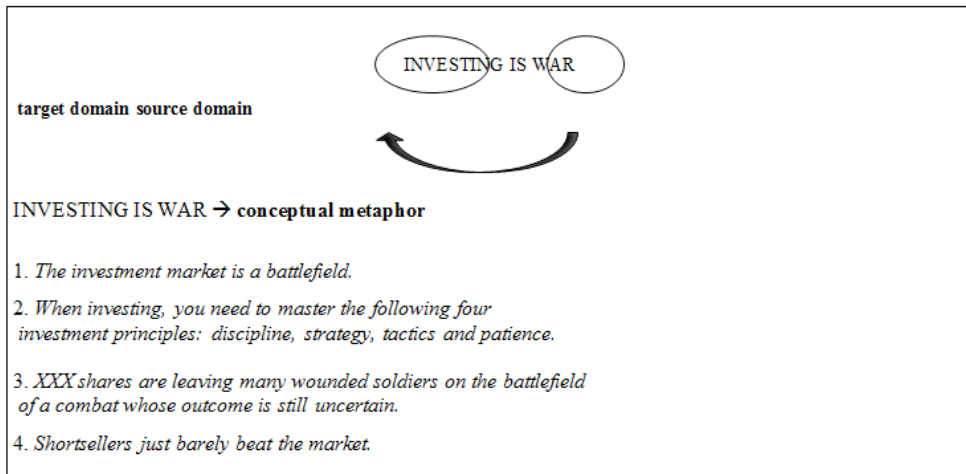
many different realizations at the surface level of language such as the four examples, all from authoritative sources, given in Figure 1; "The investment market is a battlefield", "When investing, you need to master the following four principles: discipline, strategy, tactics and patience", "XXX shares are leaving many wounded soldiers on the battlefield of a combat whose outcome is still uncertain" and "Shortsellers just barely beat the market".[2] Far from having the rather superficial role of enhancing stylistic elegance through linguistic ornamentation, the above linguistic realizations of the conceptual metaphor INVESTING IS WAR are cognitive instruments as the interaction between thoughts from the two domains (the source domain and the target domain) leads to new understanding (Charteris-Black 2004). This understanding, however, is informed by discourse practices (Fairclough 1995), i.e. ways of talking about and defining investment issues, notions and institutions that have been formulated over and over again, such that, though they are conventional, they come to seem natural, and they construct a social reality in which investing is an activity involving risk taking and possible damage. As such, these 'natural' discourse practices in the field of investing – historically dominated by men (Crystal 2003; Ferguson 2008) – may result as unfamiliar, and thus also often unattractive, to women. To the extent that the field of finance

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February, 2016).

    2 Sources: 1. *Business Insider* (23 March 2016); 2. Robbins, Rob (2012). *Tactical Trend Trading: Strategies for Surviving and Thriving in Turbulent Markets.* New York: Apress; 3. *Il Sole 24Ore*, 16 October 2014, p. 46 (our translation of "Il titolo XXX sta facendo molti feriti sul campo di una battaglia che resta incerta"); 4. *Financieel Dagblad*, 24 October 2014; p. 21 (translated by the authors from the Dutch "Shortsellers verslaan de marktmaar net").

and investing has been a largely male enterprise for centuries, the metaphors – a form of discourse practice - used in this field have been conceived, formulated and repeated again and again by men, and they have therefore become ancillary in first constructing and then reinforcing the idea that finance is a male arena.

From this viewpoint, the often-quoted metaphor 'money talks' conceptualizes and embodies a way of talking about money that is predominantly masculine, as is shown by previous studies in cognitive linguistics and critical discourse/metaphor analysis that examined the most common conceptual metaphors in Economics and Business. Boers and Demecheleer (1997) find evidence that the majority of metaphors used in *The Economist*, *Business Week*, *The Financial Times*, and *Fortune* come from the source domains of journey, health, war, mechanics, gardening, and food. Koller (2004) finds that in mergers and acquisitions texts evolutionary struggle metaphors prevail, while Guo (2013) concludes that the metaphors used in the Chinese media coverage of Geely's acquisition of Volvo come from the source domains of marriage, journey, health, and war. Morris *et al.* (2007) underline the fact that metaphors may not be neutral in their impact on investor behavior. They study the occurrence and effect of the metaphors used by stock market commentators and distinguish between agent metaphors and object metaphors. Agent metaphors describe stock price movements in terms of an intended action by an animate being: "the Dow fought its way upward,'' and ''the S&P dove like a hawk." Object metaphors, instead, describe stock price movements as the result of an external physical force: "the Nasdaq dropped off a cliff" and "the S&P bounced back". They find that metaphor use affects investor expectations, as agent metaphors increase the probability that investors expect a stock price trend to continue, while object metaphors do not.

To illustrate how metaphors evoke conceptual associations (Lakoff 1987; Lakoff and Johnson 2008), let us compare the metaphorical expressions 'asset building' and 'asset growth'. They both express significant, but quite different aspects of an increase in wealth. 'Asset building' evokes associations with the domain of physical constructions, design, heavy physical labor, and maintenance, while 'asset growth' evokes associations with the domain of sowing, caring, and dependence on weather conditions. Therefore, if it is true that conceptual metaphors may guide judgment and behavior (Barrett *et al.* 1995; Ferraro *et al.* 2005; Cornelissen *et al.* 2011), 'building assets' may steer the viewpoint towards working according to a plan in the direction of a clearly envisioned result, while 'growing assets' may steer it towards awaiting a less controlled result. Pursuing this line of argumentation, 'building' could make users think that planning and acting are called for and unavoidable, whereas 'growing' could make users think that caring and waiting are the way to go. Moreover, if the represented reality seems unfamiliar, conceptual metaphors may steer the receiver away (Oberlechner *et al.* 2004). To sum up, the carrying across of words from one conceptual domain to the other inevitably makes some aspects of reality (the concept or action it is meant to describe) vivid and concrete, with the result of 'hiding' other aspects of that same reality. Depending on, for instance, the receiver's social identity, they may, therefore, create positive or negative affect.

3. Methodology

We selected websites targeting beginning retail investors in three different languages: Italian, Dutch, and English. These languages have in common that they are spoken on the European continent even though they have different origins; Italian is a Romance (Neo-Latin) language, whereas Dutch and English are West Germanic languages. Italian, like all Romance languages, has a gender-marked grammar (i.e. nouns are either masculine or feminine and all determiners, pronouns and adjectives related to a noun change their form according to the gender of the noun they refer to), while the grammar in Dutch and English, like many Germanic languages, is gender-neutral. Note that the purpose of this paper is *not* to compare and analyze differences among these languages. Rather, the focus is on similarities: can metaphors used in investor communication be traced back to similar source domains? The sample websites selected for our investigation into the metaphors used in investment communication are the following:

- Italian: *Investire in borsa – corso pratico per principianti* (http://www.windoweb. it/dossier/investire_in_borsa/guadagnare_in_borsa_1.htm, retrieved 25-9-2013)
- Dutch: *Beleggen voor beginners* (http://www.beleggenvoorbeginners.org/; retrieved 27-9-2013)
- English: *The beginner's guide to investment* (http://www.which.co.uk/money/ savings-and-investments/guides/the-beginners-guide-to-investment/; retrieved 26-9-2013)

These websites were chosen for a number of reasons. First of all, we need texts that potential investors get to read. Ideally, we should analyze texts produced across all media in order to thoroughly dissect the investment language encountered by all financial consumers, not merely the visitors of investing sites for beginners, which is already a biased group. However, this was not feasible, and investing websites for beginners were our second-best choice as they constitute a 'portal' target in an audience of financial consumers who still do not invest in the stock market. Second, these websites score highest on Google when searching, in each language, for a combination of the words indicating 'beginner' and 'investment'. Third, being beginner's guides to investment, they try to avoid the highly specialized vocabulary of the field as much as they can. Finally, the websites are more or less comparable length-wise, and content-wise they give beginning investors similar guidelines. It is an admittedly limited corpus but worthwhile as a starting point, since, to our knowledge, no existing corpora about investment language exist.

   The key steps in our qualitative investigation process are the following (Cameron and Low 1999; Charteris-Black 2004):[3]

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3 Although we are not explicitly employing the "metaphor identification procedure"

1. Data retrieval: the complete text was downloaded.

2. Data selection: parts recognizable as advertisements or news stories were omitted.

3. Close reading: the remainder was read to establish a general understanding of the meaning.

4. Metaphor identification: based on Charteris-Black's definition of metaphor discussed in 2.3. and the resulting chart in Figure 1, each text was scrutinized for words and/or phrases that revealed the presence of incongruity or semantic tension resulting from a conceptual shift in domain use. Here are some examples.

> a) Despite *the poor financial health of the market* in recent years, investment opportunities exist.
> b) If you had all of your money invested in one asset or sector, and it began to drop in value, *your investments would suffer.*
> c) [...] European *stocks and bonds began feeling the chill.*
> d) Investors are routinely warned to spread risk by putting their money in a broad mix of assets. But *how many baskets of eggs is it sensible to carry at once?*

The phrases in italics are metaphorical expressions because they create a relationship between two different conceptual domains by shifting the use of words from one domain to the other: from HEALTH in (a) and (b), THE FIVE SENSES in (c), FARMING in (d) to INVESTING.

5. Metaphor analysis: using the above explained semantic tension at a cognitive level as a required criterion for classification as a metaphor, words and phrases were selected and their context further examined to determine whether its use was metaphoric or literal.

6. Metaphor coding: each candidate metaphorical expression was reported as such, noted with its immediate context (i.e., surrounding words) and classified according to its source domain. The process of establishing the source domains was a joint effort of all the authors. In the end, we agreed to six main source domains: WAR, HEALTH, PHYSICAL ACTIVITY, GAME, FARMING and THE FIVE SENSES. Section 4 will discuss these domains and their selection in more detail. Although the six domains may appear as uniform and quite self-explanatory, each of them blends metaphoric expressions referring to more than one aspect of the conceptual model/system they label.[4]

(MIP) of Gerard Steen (2002) and the Pragglejaz Group (2007), their extremely detailed method to identify metaphorically used words by literally dissecting every single lexical unit in discourse informed, though indirectly, our research.

4 All authors of this paper are fluent in English, two are native speakers of Dutch, two are native speakers of Italian and one is fluent in Italian. This made it possible to have each text examined by at least two authors. The analysts compared the metaphors found and, on that basis, distinguished a closed set of overarching source domains to be used to categorize the metaphors found in the investment texts.

7. Metaphor categorization: the six source domains found were categorized according to whether they could create different affect depending on the gender of the reader by using a gender stereotype classification.

4. Findings

Table 1 presents an overview of the most frequent metaphors found in the chosen investing websites for beginners.[5]

Table 1. Summary statistics

	Dutch	Italian	English
Number of words used in full text	6,023	3,761	3,735
Number of metaphoric expressions found	142	92	148
10 most frequently used metaphors (with frequency of their linguistic realizations)	• goed/slecht doen [to do well/bad] (19) • stijgen/dalen [rise/fall] (11) • turbo/sprinter (11) • spreiding/spreid [dispersion/to spread] (10) • verlies [loss] (8) • winst [profit] (8) • partij [party] (8) • hefboom [leverage] (6) • doel/doelstelling [target] (5) • moeilijk/makkelijk [difficult/easy] (5)	• scendere/salire [rise/fall] (23) • andare bene/male [to do well/bad] (17) • oscillazione/oscillare [fluctuation/fluctuate] (7) • sano/malato [healthy/ill] (7) • tranquillo/nervoso [calm/nervous] (6) • reazione/reagire [reaction/to react] (4) • armi/armare [arms/to arm] (2) • centrare/mancare [to hit/to miss] (2) • correre un rischio [to run a risk] (2) • giocare [to play] (2)	• rise/fall (24) • grow/growth (16) • lump sum (14) • protection/to be protected (12) • to spread (10) • fluctuation (8) • loss (6) • to be good/bad (4) • impact (4) • step (in) (3)

While some metaphors appear in the top ten for all languages, there are also differences among the languages. For instance, there are more metaphors belonging

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5 A full list of metaphors, as well as their categorization into source domains, can be obtained from the authors.

to the source domain WAR in the Dutch and English texts than in the Italian one. Moreover, neither the Dutch nor the Italian texts contain 'growth' metaphors but there are sixteen of them in the English text. The analysis of the similarities and differences would be interesting in itself but is not the subject of this study. Still, we would like to draw attention to the fact that although the Dutch text contains more words than the Italian and English texts, the number of metaphors is greater in the Italian and English texts than in the Dutch text.

After having identified the candidate metaphors in our three texts, we allocated each of them to a source domain. We found that the majority of them can be grouped into six different source domains, which are hereafter listed with some examples.[6]

1. PHYSICAL ACTIVITY, intended both as speed or motion (i.e. going fast/slow or up/down) and (de)construction (i.e. building or destroying):

	PHYSICAL ACTIVITY	
	speed/motion	(de)construction
Dutch	... u kunt beleggen in *sprinters.* (... you can invest in *sprinters.*)	... als je rendement aan het *verdampen* is. (... if your investment is *evaporating.*)
	... het resultaat van *snelle stijgers.* (... the result of *fast climbers.*)	... een *plan* voor uw vermogen *opstellen.* (... set up a plan for your assets.)
Italian	... fino a quando i titoli non danno chiari segnali di *un'inversione di rotta.* (... until your shares give clear signs of a *turnaround.*)	... può *far lievitare* un titolo. (... it can make a stock price *rise.*)

6 The English translation of each example in Dutch and Italian is provided below the original metaphorical expression.

	... non è detto che i titoli *marcino* con utili a due cifre. (... shares do not necessarily *march* on a double-digit profit growth.)	... ti *bruceresti* l'investimento al primo calo. (... you would *destroy* your investment after the first stock market drop.)
English	And while *riding out* the movements of the market, ...	How *to build* a successful portfolio ...
	A way *to steer around* the fluctuations in price of markets or assets is ...	... and ensure that your investments *are tailored* exactly to your needs.

2. HEALTH, intended as both physical and psychological, including illness and death:

	HEALTH
	HEALTH
Dutch	... kunnen deze lasten *fataal* worden. (... these burdens can be *fatal*).
	... de gehele sector zit in een *dip*. (... the whole sector is in a *dip*.)
Italian	Alcuni titoli hanno oscillazioni molto contenute ma altri possono essere più *nervosi* ... (Some stocks have moderate fluctuations but others can be more *nervous* ...)
	... i mercati sono *depressi* ... (... markets are *depressed* ...)
English	... you may prefer *to drip feed* your money on a regular basis.
	You have less time for your money *to recover* ...

3. WAR, intended as physical violence (i.e. fighting), armed battle (i.e. a conflict) and military strategy:

	WAR	
	fighting/conflict	military strategy
Dutch	... de kans op *verlies beperken.* (... limit the chance of *losses)*	... kierzen voor een andere *strategie.* (... choose another *strategy)*
	... aandelen *beschermen* tegen koersdaligen. (... *protect* investments against falling.)	... laat u *adviseren* door een *partij.* (... have some *party advise* you)
Italian	... è sempre molto meglio *mancare* un maggiore guadagno che *centrare* una perdita secca. (... it's always better to *miss* a greater gain than to *hit* a dead-weight loss.)	...le migliori *mosse strategiche* per investire in Borsa. (... the best *strategic moves* to invest in the stock market.)
	... come *difendersi* da questi rischi. (... how *to defend oneself* from these risks).	... compiere delle *manovre* sul mercato azionario. (... *to maneuver* in the stock market.)
English	When the credit crunch *hit* the following year ...	... you have to master the following four investment principles: *discipline, strategy, tactics and patience.*
	The investment market is *a battlefield.*	... to *maneuver* through investment rules.

4. GAME, referring to games with rules (including sports) as well as games of chance (i.e. gambling):

	GAME	
	games with rules/sports	chance-based games
Dutch	...tussentijds *switchen* kan altijd... (... you can always *switch* in between ...)	... laat u niet *verleiden* ... (... do not let yourself *be tempted* ...)
	... u kunt tussentijds *bijsturen* ... (... you can *steer* in between ...)	... *gokken* op hoger rendement. (... *gamble* for higher investment)
Italian	... come fare a *vincere* contro il panico da trading. (... how to *win* against trading panic.)	Ma allora sì che *si gioca* ... e si corrono dei bei rischi. (But in this case you are *gambling* ... and you are taking big risks.)
	... desiderano *cimentarsi* in investimenti. (... they would like *to have a go* at investing.)	Non cercare di fare troppo il furbo ... rischieresti di *restare con un palmo di naso.* Don't try to be too smart ... you'll run the risk of *being very disappointed.*)
English	Investment can enable you *to match* or even *beat* inflation ...	Don't *bet on* only *one horse.*
	... inflation *is beating* the return on interest rates.	*How much risk* do you think *you're willing to take*? No investment is *risk-free.*

5. FARMING, referring to all the activities that need to be carried out to run a farm (i.e. growing crops, raising livestock, etc.):

	FARMING
Dutch	… de *opbrengst* doorgeven … (… pass on the *profits* …)
	… afhankelijk van dit geld als inkomsten *bron*. (… depending on this money as a *source* of income)
Italian	… e sperare che i titoli *diano i frutti attesi*. (.. and hope that your stocks *yield the expected benefits*).
	… non *mettere il carro davanti ai buoi*. (… don't *put the cart in front of the horse*.)
English	If you want *to grow* your money, …
	… spread the risk and *do not put all your eggs in one basket*.

6) THE FIVE SENSES, referring to human sensory experiences; namely, sighting, smelling, hearing, tasting, and touching:

	THE FIVE SENSES
Dutch	… aan gouden tips zit nog wel eens een *luchtje*. (… golden tips tend to be *smelly*)
	… het kopen en verkopen komt vaak op *gevoel* aan. (… buying and selling are matters of *feeling*)
Italian	…*tastate bene il terreno* prima di decidere in quali titoli investire. (… *taste the waters carefully* before deciding which stocks to invest on.)

	... forse i titoli *sentono odore di crisi.* (... perhaps your stocks *are smelling* the crisis.)
English	Buying assets on a monthly basis is a means of *tipping your toe in the water* and monitoring your investments.
	Listening to market predictions may *blur your vision.*

Table 2 shows, for each of the above source domains, the most frequent metaphors in the Dutch, Italian and English texts respectively. Table 3 gives, for each source domain, the frequencies of all the metaphors found and Figure 2 presents these frequencies graphically.

Table 2. Most frequent metaphors in the three languages,
divided by source domain

	Dutch	Italian	English
Most frequently used metaphors by source domain (with frequency)	PHYSICAL ACTIVITY - stijgen/dalen (11) - turbo/sprinter (11) - spreiding/spreid (10) - heefboom (6)	PHYSICAL ACTIVITY - salire/scendere (23) - oscillazione/oscillare (7)	PHYSICAL ACTIVITY - rise/fall (24) - to spread (10) - fluctuation (8) - step (in) (3)
	HEALTH - *goed/slecht* doen (19) - moeilijk/makkelijk (5)	HEALTH - andare bene/male (17) - sano/malato (7) - tranquillo⁄nervoso (6)	HEALTH - to be good/bad (4)
	WAR - verlies (8) - winst (8) - partij (8) - doel/doelstelling (5)	WAR - reazione/reagire (4) - armi/armare (2) - centrare/mancare (2)	WAR - protection/to be protected (12) - loss (6) - impact (4)
	GAME - gambling (4)	GAME - correre un rischio (2) - giocare (2)	GAME - to beat st/sm (2)
	FARMING - opbrengst (1)	FARMING - dare i frutti (1)	FARMING - growth/grow (16)

Table 3. Metaphors divided by source domain, absolutes and proportions

Source domains	Dutch	Italian	English
Physical Activity	58 (41%)	36 (39%)	69 (47%)
speed/motion	*31*	*34*	*44*
(de)contruction	27	2	25
Health/Well-being	30 (21%)	33 (36%)	17 (11%)
War/Conflict	36 (25%)	10 (11%)	24 (16%)
Game (*play/ chance*)	12 (9%)	9 (10%)	4 (3%)
Farming	2 (1%)	1 (1%)	32 (22%)
Senses	4 (3%)	3 (3%)	2 (1%)
Total	142 (100%)	92 (100%)	148 (100%)

Figure 2. Metaphors according to their source domains, percentages per language
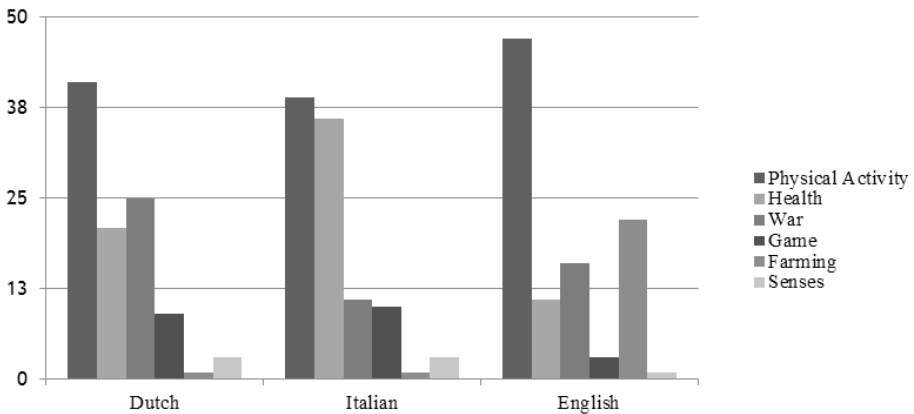
In Tables 1 through 3 several things stand out. First, the metaphor source domains are the same across the three languages. Second, some of them are similar to those found in business texts, notably WAR and HEALTH (Koller 2004; Guo 2013), while others are not. Finally, while in business texts MARRIAGE is a frequent metaphor, it is absent in the texts we analyzed. This is most likely so because business texts often talk about mergers and acquisitions between/of companies, whereas our texts address financial consumers.

To categorize PHYSICAL ACTIVITY, HEALTH, WAR, GAME, FARMING and the FIVE SENSES based on their gender dimension we use the Bem Sex-Role Inventory (BSRI) (Bem 1974). The BSRI is a self-report questionnaire that asks participants how well 60 different attributes describe themselves. This list of attributes reflects the definition of masculinity (20 questions) and femininity (20 questions), while the remaining 20 questions are mere filler questions. The masculine and feminine attributes were chosen based on what was culturally appropriate for males and females in the early 1970s, and the inventory was developed to tell what kind of gender role and individual it fulfills and, most importantly, the level of androgyny of individuals. As part of the cultural transformation of the so-called second-wave feminism (Eckert 2003), Sandra Bem, a professor of psychology at Stanford University, wanted to prove that women and men possess similar characteristics by testing the level of androgyny of individuals (i.e. their combination of 'masculine' and 'feminine' personality traits) and providing empirical evidence to show the advantage of a shared masculine and feminine personality versus a sex-typed categorization. Since the year the BSRI was published, decades have passed in which gender roles have changed. However, it was still valid at the turn of the century (Holt and Ellis 1998) and is still the instrument of choice in research on gender role orientation and perceptions. It can therefore be safely assumed that, despite trends towards egalitarianism in Western societies in the 21st century, essential imagery and metaphorical framing are still different between men and women.

According to the BSRI, women are assumed to be emotional, empathetic, caring and loving, supportive, cooperative and lacking physical strength, whereas men are assumed to be rational and impassive, competitive, willing to fight and take risks and possess physical strength. Therefore, PHYSICAL ACTIVITY, WAR and GAME are source domains that correspond to conceptual systems that feel more familiar to men than to women. Also the decision to consider HEALTH and FARMING as source domains that are in a neutral position regarding gender was made with an eye on the BSRI, and further linguistic evidence confirmed our decision. Despite the large body of empirical research that supports the popular belief that there is a lack of expressiveness in relation to men's physical and emotional health issues, Charteris-Black and Seale (2010) have recently demonstrated that both men and women talk about their health issues. What *is* different are the ways – both at a grammatical and lexical level – in which men and women talk about them (Seymour-Smith et al. 2002).

As to the source domain of THE FIVE SENSES, linguistic evidence underscores that sensory metaphors are universally used (i.e. used across families of languages

and cultures), as they are more memorable - easier to retrieve from memory - than their semantic analogues. More specifically, sensory metaphors help express abstract concepts by linking them to direct bodily experiences with the physical world. For instance, calling an unfriendly person 'cold' suggests that, like a frosty winter, he or she is not very inviting (Akpinar and Berger 2015). Sensory metaphors provide a common ground for social interaction inasmuch as referring to universally shared human experiences - those of the five senses - which strengthens social bonds and enhances conversation flow among people, independently of their gender. Still, as the agreed upon reference point of our categorization is the BSRI – according to which women are considered more 'sensitive' and 'emotional' than men and, thus, they are supposed to 'feel' more than men – we categorized THE FIVE SENSES as a feminine source domain.

In conclusion, our categorization includes only one source domain that women identify more with than men. Table 4 shows the percentages of metaphors found according to their familiarity to each gender for each of the three languages.

Table 4. Metaphors and their gender familiarity based on the BSRI, proportions

Familiarity Source domain	Dutch			Italian			English		
	F	M	N	F	M	N	F	M	N
PHYSICAL ACTIVITY		41			39			47	
HEALTH			21			36			11
WAR		25			11			16	
GAME		9			10			3	
FARMING			1			1			22
SENSES	3			3			1		
Total	3%	75%	22%	3%	60%	37%	1%	66%	33%

F: Feminine source domain; M: Masculine source domain; N: Neutral source domain.

*Figure 3. Distribution of metaphors over masculine,
feminine and neutral source domains*
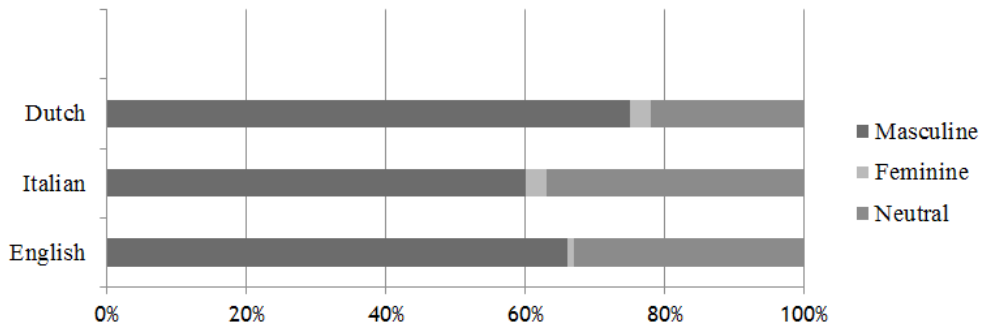
Based on Figure 3, and accepting a source domain classification based on the BSRI, the conclusion should be that the majority of these metaphors come from worlds/conceptual systems that are familiar to men and unfamiliar to women. There is a slight difference among the three languages, with more masculine and less neutral source domains in Italian compared to Dutch and English as Figure 3 illustrates.

5. Discussion

Our findings indicate that in the three languages - Dutch, Italian and English - metaphors in investor communication come from identical source domains, and that these domains are predominantly masculine.

A predominance of metaphors from masculine source domains comes as no surprise. On the one hand, while, within the patriarchal household, providing financial security to the family has been a masculine endeavor from the start, financial markets and institutions have traditionally been a man's world. In the past, sons, not daughters, inherited the family's fortune, and the one and only investment decision that might have been made by upper class women was choosing (or rather, being chosen by or for) a wealthy husband. The husband used to be the only or main income earner, and any investment decision was taken at household level. Even finance theory continues to assume a unitary financial consumer (Donni and Chiappori 2011) and research into differences in financial planning preferences within the family is of a recent date (Browning *et al.* 2014). This may also explain why gender marketing, so common for most consumer products, is virtually absent for financial products and services.

On the other hand, the use of gendered metaphors does not mean that, for instance, men like to go to war or even that they have actually served in the army. Rather, the masculine source domains evoke images of worlds that are, or were,

populated more by men than by women, or worlds and activities that are (perhaps unconsciously) considered to be carried out more likely by men than by women, just as the word 'diet' evokes images of a world in which men feel they do not or should not belong, even though men *are* interested in their weight and the way they look. As explained in 2.2., people tend to have swift and instinctive emotional responses when asked to make decisions in a risky environment. Therefore, choosing metaphors that feel familiar to them in those situations may be an unconscious, automatic process, largely based on the gender stereotypes they have grown up with. Moreover, people are (linguists excluded, perhaps) unaware of the fact that metaphorical expressions such as, for instance, 'building a portfolio' is not neutral - until they realize that 'knitting a portfolio' sounds very different.

Our findings, though based on a small corpus, are consistent with the hypothesis that the presence of a gender bias in investor communication could be one of the explanations of a gender difference in investor judgment and behavior.

6. Conclusions and future research

Our analysis so far has, of course, various limits. In particular, only using the BSRI to categorize the six source domains according to their gender dimension is insufficient to draw firm conclusions on the role of metaphors in explaining the gender gap in financial attitudes and decision-making. However, in their analysis of stock market reporting Prast *et al.* (2015) find that other categorization criteria of source domains lead to a similar conclusion as the BSRI. Further research is needed to verify whether metaphors in investor communication are indeed non-neutral.

There is no doubt that our analysis suggests that comparing the effects of the found masculine metaphors on financial attitudes and behavior of both men and women with their feminine counterparts is certainly worthwhile. If a different impact on attitudes and behavior were found, this should have practical implications. Most important of all, it would imply not only that a language change within investor communication is needed to make financial markets a gender level playing field, but it would also imply that investor communication may bias people, regardless of their gender, toward making decisions that are not in line with their true preferences. Given policymakers' attempts to help investors make adequate decisions (see, for instance, MiFID rules and regulations)[7], this would have implications both for an evaluation of current investor protection policies *and* for a greater financial inclusion of women.

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7 The Markets in Financial Instruments Directive 2004/39/EC (known as MiFID) is a European Union law that provides harmonized regulation for investment services across the thirty-one member states of the European Economic Area (the twenty-eight EU member states plus Iceland, Norway and Liechtenstein). MiFID's main objectives are to increase competition and consumer protection in investment services.

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