Articles

The personal_relationship frame in love fraud

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ABSTRACT

This research analyzed the love fraud event within the context of the PERSONAL_RELATION and the INTENTIONAL_DECEPTION frame in FrameNet. Of the concepts that characterize this event, the focus was on RELATIONSHIP, namely, its stages, participants, and dimensions. The data consisted of extended conversations between 83 scammers and the author, which were recorded from January 2021 to June 2024. When the corpus was analyzed on the SketchEngine platform, the collocates of *relationship* with the highest LogDice scores were identified and structured. The results show that fraudsters use scripts to construct a romantic relationship with victims, which begins with friendship, progresses to 'soulmateship' and engagement, and finally ends in an online 'marriage'. This is accomplished through the strategic use and repetition of terms that belong to the PERSONAL_RELATION frame in FrameNet. The objective is to extract as much money as possible from the victim.

1. Introduction

1.1. Love fraud

Love fraud or romance scamming is a form of online deception that has become increasingly widespread in today's digital world. It is a variant of the 419 advance fee scam (Levi et al., 2017), named after Section 419 of the Nigerian Penal Code, in which fraudsters contact potential victims, via Internet, with an extremely lucrative offer. The victim is then asked to pay various fees upfront to receive a veritable fortune. However, after payment, the promised funds never materialize, and the scammer disappears with the victim's money.

However, this fraud is not new. The oldest version is the Spanish Prisoner, which dates back to the 1500s. In this scam, the target is approached by a trickster, who claims to be in correspondence with a wealthy English nobleman, held captive in Spain. The trickster offers the victim the possibility of paying some of the costs of the captive nobleman's release. In return, he not only promises the victim a percentage of the reward, but also the hand of the prisoner's beautiful daughter. If the victim gives the trickster money, additional complications then ensue, which require even more funds. When the victim has no more money, the trickster vanishes (Gillespie 2017, pp. 217–218).

More modern versions of this scam are now conducted either partially or totally online. Love fraud has proliferated in recent years because more and more people use dating apps and social networking sites to search for romance. For this reason, the Internet is now rife with fraudsters, who are on the lookout for victims to woo, enamor, and deceive. The final objective is to steal as much of their money as possible.

To accomplish this, a typical (male) fraudster[1] portrays himself as a wealthy doctor, military officer, oil rigger, engineer, independent contractor, or businessman, usually working in some far-off land. After he finishes his 'last contract', he plans to retire and settle down with the woman of his dreams, whom he has been searching for since the death (or departure) of his first wife.

Not only does he own various properties and two or three cars, he also has all the virtues desirable in a long-term partner (Chang and Chong, 2010, p. 342; Cross and Holt, 2021). He is either widowed or divorced, usually with one child in a boarding school or in the care of a guardian.

Guided by destiny, he happens upon the victim's social network profile and feels irresistibly attracted to her. After she answers his friend request and they begin chatting, the fraudster invests considerable time and effort in constructing an online relationship with her. From the beginning, he informs her that he is in quest of a soulmate and future wife. This relationship rapidly becomes very serious and eventually results in a marriage proposal.

After mutual declarations of love, an emergency arises that can only be resolved with a large sum of money. Since the fraudster has no close friends or family and cannot access his bank account, he asks his fiancée for help and swears to pay her back when he returns home. Because they are in a committed relationship, the victim feels obliged to come to her

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[1] Since all of the interactions in this study were between male fraudsters and a female victim, the fraudster will always be referred to as *he* and the victim as *she*.

fiancé's aid. However, once she sends him money, the demands for financial assistance continue until her bank account is empty. At that point, the fraudster vanishes.

1.2. Financial losses

Love fraud is popular because it is so lucrative. Though largely underreported by victims, this deception has led to substantial financial losses (Wang and Topalli, 2022). As highlighted by Aborisade et al. (2024), in 2022, the United States Federal Trades Commission reported that 70,000 people complained of being victims of romance scams and were defrauded of $1.3 billion[2] with a median reported loss of $4400 (Fletcher, 2023).

In the United Kingdom, during the same period, the sum of £88 million was lost to online dating fraud with an average loss of £11,000 per victim (Wilde 2023). According to the banking trade association UK Finance, in the first half of 2023, fraudsters stole £580m. Nonetheless, the most devastating losses are not financial.

1.3. Emotional loss

In love fraud, the emotional loss is much worse than the loss of money (Whitty 2018) because victims often mourn their phantom love long after their finances have recovered. According to Aborisade et al. (2024), love fraud victims are prone to suffer great psychological pain (shame, anxiety, depression, or even suicidal ideation) (Buchanan and Whitty, 2014; Cross and Lee, 2022; Whitty, 2018).

Typical female victims are well-educated middle-aged women, who are prone to romantic idealization (Whitty 2018). Precisely because they have never met the fraudster, they find it difficult to erase their affection for his idealized image even after they become aware of the deception (Chuang, 2021).

The success of this fraud lies in making the victim believe that her relationship is real. This romantic illusion is created through language. The words and phrases used by the fraudster to construct the relationship evoke frames of an idealized personal relationship. As shall be seen, they are even included in 'formats'[3] (scripts) that many fraudsters use for this purpose.

1.4. Literature review

Research on love fraud has been conducted from the perspective of Criminology (Lazarus, 2018; Cross and Holt, 2021); Psychology (Buchanan and Whitty, 2014; Kopp et al., 2015); Computer Science (Suarez-Tangil et al., 2020), and even Neuroscience (Chuang, 2021). Studies have also targeted different aspects of love fraud such as victim reactions (Wang and Topalli, 2022), military profiles (Cross and Holt, 2021), and financial loss (Dickinson et al. 2023), etc. See Coluccia et al. (2020) and Bilz et al. (2023) for systematic reviews.

Studies on fraud language include Schuy (2016) who underlines the need for linguistic analysis in fraud cases, and Dreijers and Rudziša (2020), who analyzed the linguopsychological devices used by fraudsters to lure victims into the scam scenario. After analyzing seven letter-sets, based on AntConc frequency plots, they were able to identify regularities in the stages, functions, and objectives in the letters.

Koon and Yoong (2013) identified some of the linguistic characteristics of the online interaction between scammers and their targets such as establishing credibility through self-descriptions and cultivating emotional dependency. Faber (2024) analyzed love fraud within the context of the commercial transaction frame in which the main

participants were the seller (fraudster), buyer (victim), goods (long-term romantic relationship), and money (paid by the victim).

Lee et al. (2022) used corpus methodology to reveal linguistic features typical of scammer profiles on online dating portals, and which show an effort to explicitly construct self- and desired partner with adjectives describing personal attributes. Carter (2023) also explores the language and the effect of language used in fraudulent communications. Her analysis focused on the fraudster instead of the victim and revealed the strategies used to groom, deceive and exploit within the context of a false romantic relationship.

Based on victim accounts, Whitty (2013a,b, 2018), divides the love fraud event in the following five stages: (1) profile stage where the fraudster identifies himself, his profession, and location; (2) grooming process in which he declares his interest in a committed relationship with the victim and courts her; (3) crisis and request for money; (4) optional sexual abuse; (5) revelation of the deception. From the perspective of the victim, Shaari et al. (2019) also identified the following three stages in love fraud: (1) initial; (2) pre-attraction; (3) hooked.

However, the stage-model that is most relevant to this research is Carter (2024), whose division is based on critical discourse analysis (CDA) in the tradition of Fairclough (2010). Carter's (2024) linguistic analysis of authentic fraudster messages identifies the following stages: (1) romance; (2) transition; (3) finance; (4) post-romance sextortion.

However, further research from other linguistic perspectives would also be useful with a view to automatically detecting this deception and raising public awareness of it. The remainder of this paper is organized as follows. Section 2 discusses the theoretical framework. Section 3 describes the materials and methods used to carry out the study. Section 4 explains and discusses the results obtained. Section 5 presents the conclusions derived from this research.

2. Theoretical framework

This study analyzes the love fraud event from the perspective of Frame Semantics (FS) (Fillmore 1976, 1982, 1985, 2006). A frame is a kind of underlying conceptual structure or cognitive context, which has a parallel in language in the sense that an entire frame of related meanings can be activated by a single term (Fillmore 2006). The assumption that frames are present in texts is the foundational premise of Frame Semantics (FS), based on Fillmore's (1976, 1982, 2006) Case Grammar.

In this sense, a frame is "a script-like conceptual structure that describes a particular type of situation, object, or event along with its participants and props" (Ruppenhofer et al., 2016, p. 5). In its simplest form, a frame is an underlying conceptual structure into which the meanings of related terms fit.

This study on love fraud also applies the notion of 'frame', (Minsky, 1975; Fillmore, 1985, 2006), defined as "a schematization of experience (a knowledge structure), which is represented at the conceptual level and held in long-term memory, and which relates elements and entities associated with a particular culturally embedded scene, situation, or event from human experience" (Evans and Green, 2006, p. 85).

The practical application of Frame Semantics is FrameNet (https://framenet.icsi.berkeley.edu/), in which a lexical unit (LU) is a pairing of a word (or phrase) with a specific meaning within a semantic frame. "Each LU is linked to a semantic frame, and hence to the other words which evoke that frame." (Ruppenhofer et al., 2016, p. 6).

Since the love fraud event is based on the construction of a false relationship, we focused on the PERSONAL_RELATIONSHIP frame, whose core Frame Elements (FEs) are the people engaged in a kind of relationship (Partner 1, Partner 2, or the joint construal of two Partners). They may denote an actual relationship, one under construction, or the events bringing about or ending relationships.

Love fraud thus takes place within the PERSONAL_RELATIONSHIP frame, which is superimposed on the INTENTIONAL_DECEPTION frame because the

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relationship is a false one. In the INTENTIONAL_DECEPTION frame, a Deceiver performs some action that gives the Victim an incorrect understanding of some Topic (the romantic relationship). The Means may be via communication, perceptual obscuration, or merely an action that the victim draws incorrect conclusions from. Core FEs are thus the Deceiver (fraudster), Topic (committed relationship), and Victim.

3. Materials and methods

3.1. Materials: data and sample population

The data for this study were obtained over a three-year period (2021–2024) and were extracted from conversations between 83 fraudsters and the author. Also relevant were love fraud scripts (or 'formats') used in Nigeria and Ghana.[4] The conversations in the corpus pertain to the romance, transition, and finance phases in Carter (2024). Since no explicit photos were ever sent, sextortion never occurred. In addition, 29 of the 83 conversations never reached the crisis stage because the fraudster disappeared before the process ended.

In 2021, the author began chatting with fraudsters, who spontaneously appeared on her social network profiles. This occurred just after she had stopped a family member from sending 500 euros to an 'American officer' supposedly in Afghanistan. No formal linguistic study was planned at the outset because she merely wished to know how the scam worked.

However, after a month of chatting with various fraudsters, she began to perceive repetitions and patterns in their texts. This was when she decided to store the conversations in text files and compile a corpus. The fact that the data collection process was not planned from the very beginning is one of the limitations of this research.

From an ethical perspective, there are also other limitations. Firstly, the data are contrived. The fact that both the victim and the fraudster were engaged in mutual deception may have biased the chat in some way. Still another limitation is the fact that the author was the only victim and had no previous experience in eliciting information from fraudsters.

According to the Ethics Committee of Human Research of the University of Granada, no ethical approval for this study was necessary for various reasons. Firstly, the study did not involve human experimentation since it focuses on linguistic data analyzed as language (i.e. syntactic, semantic, and pragmatic aspects of conversational interaction), which in no way involves or conveys the personal data or opinions of the subjects.

Secondly, because of the singular nature of this research, no personal or demographic information (e.g. gender, age, education level, specific location, etc.) was or could be obtained from the sample population of fraudsters.

Thirdly, the only inclusion criterion for participants was their spontaneous appearance on the author's social network profile along with a friend request. The subsequent conversation between the fraudster and the author lasted for a time period of one week to seven months and was recorded for the sole purpose of linguistic analysis, using SketchEngine, a corpus analysis platform.

Fourthly, all subjects were doubly anonymous and in no way identifiable because even their false identity was eliminated by changing it to their self-declared occupation and a number to distinguish them from other fraudsters with the same occupation.

Finally, this research did not harm or pose a risk to any of the participants. It thus had no victims because the participants were only trying to deceive the author. A request for money ended the conversation, after which the fraudsters eliminated their profile and vanished. The author was evidently not a victim either because she was aware of

the deception from the very beginning.

No informed consent could be obtained from sample population because the fraudsters were totally anonymous and did not wish to be contacted because of their illegal activity. If identified and reported, they could be arrested by the Nigerian or Ghanaian police. As for their location, IP Logger showed that those without a masked VPN resided in different cities in Nigeria and Ghana. In this study, the only 'victim' was the author.

For research purposes, the author portrayed herself as a widow, aged 57, with grown children but living alone. Though still working, she was tired of her solitude, and was considering retirement if she could find 'true love' in the form of an ideal 'soulmate'. The fraudsters had all created false profiles that either assumed the identity of a real person or a fake identity created with stolen photos.

In this study, 28 of the 83 fraudsters claimed to be generals in the US Army (*Gen*); 19 were UN doctors (*Doc*); 15 were oil riggers (*Oil*); 16 were engineers (*Eng*); two were ship captains (*Capt*); one was a retired UNICEF director (*Unicef*); one was the owner of a tire factory (*Tires*); and one was a celebrity (*Celeb*).

The generals, doctors, and engineers were working in Syria, Yemen, Iraq, Afghanistan, etc. The oil riggers were on platforms throughout the world. The ship captains were sailing their vessels in the Atlantic or Pacific Ocean, and the retired UNICEF director was in London to recover an inheritance of 4.5 million pounds. The owner of the tire company was in Atlanta Georgia, and the celebrity (Paul McCartney) had fled to a secret island to escape from his fans as well as the press.

Despite their wealth, none of these men had access to their money because the bank had frozen their account or because their credit card was either expired or lost. The 'relationships' between the fraudsters and the author lasted from one week to seven months. All conversations began with a message such as the following on her Facebook or Instagram profile:

(1) I must say that you have an interesting timeline and your posts here are very exciting, I always loved what you shared here on Facebook, but we aren't friends yet, I tried to send you a friend request but it's not going through. Do you mind trying from your side? I will be glad to have you here as my friend.

After accepting the friend request, the fraudster and the author subsequently chatted at least twice a day. The length of acquaintance depended on how long it took to consolidate their relationship. Shortly after the first mutual "I love you", the fraudster would invent an emergency situation and request money, which ended the relationship.

3.2. Methodology

Over a three-year period, the conversations between the fraudsters and the author were compiled in a corpus and uploaded to SketchEngine, a corpus manager and text analysis software developed by Lexical Computing CZ s.r.o. (Kilgarriff et al., 2014). The LoveFraud02 corpus (available at https://data.mendeley.com/datasets/kmhvb4×5d8/1) is composed of 85 documents with a total of 1043,330 words and 1214,557 tokens (i.e., total number of words, regardless of repetition).

The corpus analysis was based on information extracted with the Frequency, WordSketch, and Concordance modules of SketchEngine. These data were used to populate the PERSONAL_RELATIONSHIP frame in FrameNet (https://framenet.icsi.berkeley.edu/). Given the relatively small size of the corpus, words with a frequency of 100 or more occurrences were regarded as significant. Absolute frequency describes the number of times a word was observed to occur in the corpus.

These high-frequency words were grouped in categories, based on their meaning and their semantic relationships with other words. The semantic analysis was carried out manually, based on Dik's (1987) Stepwise Lexical Decomposition and the Lexical Grammar Model (Faber

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[4] The source of the scripts is a former romance scammer in Nigeria who specifically requested anonymity.

and Mairal, 1999). These words designated the most general categories in the love fraud universe: TIME, LOVE, WORK, MONEY, PERSON, RELATIONSHIP, and COMMUNICATION.

In FrameNet, the PERSONAL_RELATIONSHIP frame has the following Core FEs (frame elements), which partially coincide with those in Table 1:

- RELATIONSHIP [*friendship, 'soulmateship', engagement, marriage*]
- PARTNER [*friend, soulmate, fiancé, fiancée, husband, wife*]
- DURATION [*long-term, lasting, longlasting, everlasting*]
- LOCATION [*distance, online*]

The WordSketch for *relationship* helped to specify the frame and provided the following information: (i) modifiers of *relationship*; (ii) verbs with *relationship* as object; (iii) verbs with *relationship* as subject; (iv) *relationship* and/or another word; and (v) adjective predicates of *relationship*.

WordSketches are based on LogDice scores that measure the association strength between two words in a corpus or the typicality of the collocation (Rychly 2008; Kilgarriff et al. 2014). In text analysis, the LogDice score is helpful because it is less prone to the biases of raw frequency counts or to overly penalizing rare words. It thus enhances the understanding of semantic relations and patterns in a corpus. Since the significance of a LogDice score evidently depends on the size of a corpus, the relative ranking of LogDice scores is more important than the absolute values.

In this study, the salient word co-occurrence patterns obtained were used as a starting point for the qualitative exploration of these patterns in its semantic and pragmatic contexts found in the nearest co-text.

4. Results and discussion

4.1. Relationship

One of the most important words in the LoveFraud02 corpus is *relationship,* because love fraud depends on the construction of an (online) relationship. Without this type of commitment, the fraudster has no hope of receiving money from the victim. This relationship is gradually built in stages over a period of time.

In most dictionaries, the general definition of *relationship* is 'quality or state of being related'. The parties involved in the relationship can be people, groups, countries, or almost anything. However, in love fraud, *relationship* can be defined as follows:

Table 1
Categories in Love Fraud and words within each category.

Concept	Absolute Frequency	Most frequent lexical units in the category
TIME	3997	*time, morning/afternoon/evening/night, today/ yesterday/ tomorrow, past/future, day/night, day/ week/month/year, etc.*
LOVE	2451	*love, feeling*
WORK	2386	*work, job, business, general, officer, doctor, retirement*
MONEY	1141	*money, salary, fee, funds, dollars, euros, bank, payment, account*
PERSON	1125	*person, man/woman, husband/wife, son/daughter, friend, soulmate, fiancé, fiancée, partner, couple*
RELATIONSHIP	796	*relationship, friendship, soulmate, marriage*
COMMUNICATION	155	*communication, message, conversation, word, language, chat, text, request, compliment, question*

relationship emotional [FEELING] connection between two people (PARTNER 1 and PARTNER 2) that spend time together (TIME DURATION) and behave in a certain way toward each other (INTERACTION).

In this context, hyponyms of *relationship* are the following: (1) *friendship*; (2) '*soulmateship*'[5]; (3) *engagement;* (4) *marriage*. More specific types of relationship vary in depth of feeling (*friendship* and '*soulmateship'*) and in formality/legality (*engagement* and *marriage*) (Table 2).

The importance of *relationship* in the corpus is evident in its WordSketch, which identifies the collocates with the highest LogDice values. As reflected in Table 3, the modifiers of *relationship* highlight different dimensions of the concept.

As previously mentioned, the fraud can only be successful if the victim believes that she is in a committed relationship with the fraudster and is thus obliged to help him. This is evident in the dimensions of *relationship,* as highlighted by its modifiers (see Table 4). The corpus examples show that various fraudsters were using the same format to engage the victim.

The verbs that most frequently appear with *relationship* as their object or subject belong to the lexical domains, CAUSE TO EXIST (*build, start, create*), CONTINUE TO EXIST (*sustain*), and MENTAL PERCEPTION (*mean*) (as specified in (Faber and Mairal, 1999). However, as shown in Table 5, the verb with the highest LogDice score for *relationship* is *build*.

Of the verbs whose subject is *relationship, require* has the highest LogDice score (12.14), but that is because various fraudsters repeated the same scripted phrase:

(2) I think a good **relationship requires** being each other's best friend, and trusting one another. (*Doc01, Gen9, Gen24, Oil14*).

4.2. Cause of the relationship

In love fraud, a relationship is triggered by a cosmic force, or higher power (*God, Fate*, or *Destiny*) that has caused the paths of the fraudster and victim to cross (Koon and Yung, 2013). As observed by Carter (2024, p. 21), the relationship itself is credited as part of a greater design planned by someone other than the fraudster and victim. Since *destiny brought us together* was used by 20 fraudsters, this seems to indicate its centrality in love fraud formats, as shown in Table 6.

Both *destiny* and *fate* are terms that appeal to the human desire to believe that events do not randomly occur, and that everything happens for a reason.

4.3. Participants in the relationship

Since in this study, the male fraudster was trying to persuade the female victim to be in a relationship, the corpus has more female descriptors than male ones. As reflected in Table 7, the fraudster's discourse emphasizes her *beauty*, followed by *strength, intelligence*, and *uniqueness*.

Though the fraudster knows nothing about his victim, he praises her mental and physical attributes, as shown in Table 8. He also queries her about her religious faith because fraudsters seek pious and family-oriented women, who are more likely to positively respond to requests for financial support.[6]

The fraudster also showcases his own virtues and portrays himself as a wealthy man with many noble qualities (see Table 9). According to Carter (2024, p. 22), this description provides him with a positive moral and ethical stance", which enhances his credibility.

In fact, all of the 83 fraudsters claimed to be millionaires who possessed expensive cars, mansions, and vacation homes. When not working, ten also spent 'quality time' at the "motherless baby home" or orphanage. Others planned to build a charity hospital, when they finished their last contract (see Table 10).

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[5] 'Soulmateship' is a term invented to designate the relationship between two soulmates.

[6] Personal communication from ex-scammer in Nigeria.

Table 2

Relationship and its hyponyms.

relationship emotional connection between two people that spend time together and behave in a certain way toward each other.
friendship relationship between two people, who have affection for each other.
'soulmateship ' relationship between two people who have a deep affinity and affection for each other.
engagement relationship between two people who formally agree to marry each other at some future time.
marriage relationship between two people, who legally become partners in a special ceremony for this purpose.

Table 3

Modifiers of *relationship*.

Modifier + *relationship*	Co-occurrences (range from −3 to 0)	Occurrences of LU in whole corpus	LogDice score
concordance size	796		
our [PARTICIPANTS]	103	1362	10.61102
distance [LOCATION]	30	152	10.01815
serious [DEPTH]	31	215	9.97263
online [LOCATION]	25	566	9.23235
long-term [DURATION]	12	30	8.89496
strong [POSITIVITY]	14	178	8.87958
successful [POSITIVITY]	11	79	8.68629
past [TIME]	12	227	8.58637
good [POSITIVITY]	39	3400	8.25060
real [POSITIVITY]	10	468	8.01815
honest [DEPTH]	7	261	7.76160
future [TIME]	8	443	7.72504
lasting [DURATION]	5	14	7.66015
meaningful [DEPTH]	4	26	7.31701

Table 4

Dimensions of RELATIONSHIP.

DIMENSION	ADJECTIVE + NOUN	CORPUS EXAMPLE
LOCATION	*distance relationship, long-distance relationship, online relationship*	Tell me, have you been in a **long distance** or **online relationship** before? (*Doc09, Doc13*)
TIME	*previous relationship, past relationship, future relationship, new relationship*	What positive lessons have you learned from your **past relationships** that will help you succeed in **future relationships**? (*Eng09, Eng15. Gen04, Gen13, Gen20, Oil02*)
DURATION	*long-lasting relationship, longest relationship, long-term relationship*	That's what I want, a **long term relationship** (*Gen02, Geno8, Gen13, Oil11*)
POSITIVITY	*good relationship, great relationship, successful relationship, healthy relationship, strong relationship, fruitful relationship*	If we build a **strong relationship**, I will travel directly from here [location] to meet you (*Doc01, Doc04, Doc09, Doc14, Eng05, Eng07, Gen06, Gen14, Oil01, Oil05, Oil09*)
AFFECTIVITY	*loving relationship, wonderful relationship*	I am looking for a special, **loving relationship.** (*Doc18*)
DEPTH	*serious relationship, real relationship, honest relationship, true relationship, meaningful relationship*	I'd love to find someone who'll understand how been hurt feels and would love to find a/an **honest relationship** (*Doc11, Gen05, Gen09, Gen16, Oil01, Oil03, Oil11*)

Table 5

Co-occurrence of *build/building* and *relationship*.

Verb + Obj *Build/building a relationship*	Co-occurrences, range from −3 to 0	Occurrences of word in whole corpus	LogDice score
concordance size	30		
build	26	102	12.65605
building	4	51	10.66015

Table 6

Cause of RELATIONSHIP.

Higher power God	**God** brought us together (*Eng05, Gen16*)
DESTINY	**Destiny** brought us together (*Doc10, Doc13, Doc14, Gen05, Gen06, Gen08, Gen11, Gen16, Gen 21, Gen27, Eng01, Eng04, Oil01, Oil03, Oil05, Oil07, Oil09, Oil11, Oil12*)
Fate	Meeting you was **fate.** (*Eng04, Gen19, Oil08, Oil12*)

Table 7

Premodifiers of *woman*.

Premodifier + *woman*	Co-occurrences in range from −3 to 0	Occurrences of word in whole corpus	LogDice score
concordance size	172		
beautiful	60	956	10.76734
attractive	10	71	10.39712
strong	14	178	10.35614
intelligent	14	186	10.32354
amazing	16	288	10.15451
pretty	10	176	9.87898
honest	9	261	9.41170
right	40	2013	9.22851

frequent endearment is *queen,* pre-modified by enhancers such as *beautiful, beloved, amazing, gorgeous, darling,* and *precious*. This love-bombing occurred in the initial grooming process as a way to impair the victim's rationality and fuel poor decision-making (Wang and Topalli, 2022; Carter, 2021), but it can also be used to soothe the victim when the fraudster's requests for money alarm her (Carter, 2024, p. 46).

4.3.2. Attributes

The fraudster also admires other attributes of the victim (Table 12). Since he cannot compliment a voice that he has never heard or skin that he has never touched, his main focus is usually on her smile as seen in photos.

However, according to the fraudster, the victim's personality is where her inner beauty truly resides. Based on corpus frequency, highly valued personality traits are *sincerity, honesty, trust,* and *truthfulness*. All of these qualities are interrelated since they are often defined in terms of each other.

For example, according to the *Collins Dictionary, honesty* is the "quality of being honest" or always telling the truth, and not trying to deceive people or break the law, whereas *truthfulness* is the "quality of being honest and not telling any lies". Similarly, sincerity is the "quality of being sincere", or saying what you really think or feel" (i.e., being

4.3.1. Affective role

The fraudster continuously tells the victim that she is the center of his life. He sometimes envisions her as royalty (*queen, princess*) or even as a supernatural being (*goddess, angel*) (Table 11). However, the most

Table 8
Attributes of female participant: *woman, lady*.

Dimension	Adjective + *woman*	Corpus example
GOODNESS	*nice woman, good woman, wonderful woman*	You are [really] a **good woman** (*Capt01, Gen28*). You are /You're a **nice woman** (*Eng04, Doc16, Gen20*)
ATTRACTIVENESS	*lovely woman, attractive woman, gorgeous lady, beautiful woman/ lady, pretty lady,*	Good morning to the most **lovely** and **beautiful woman** in the whole world (*Gen05*) You are indeed a **beautiful** and **attractive woman** (*Doc02, Doc14, Eng07, Oil01, Oil03, Oil07, Oil11*)
PIETY	*God-fearing woman*	Are you (even/really) a **God-fearing woman**? (*Doc01, Doc02, Doc14, Doc15, Eng06, Eng15, Gen02, Gen04, Gen13, Gen14, Gen16, Gen27, Gen28, Oil11, Oil15*)
STRENGTH	*hardworking woman/lady, strong woman, independent lady*	You are/You're (indeed) a very **hard working /hard-working/ hardworking woman.** (*Doc08, Doc09, Doc14, Gen01, Gen02, Gen05, Gen06, Gen24, Oil09, Tires01*)
SUITABILITY	*right woman, perfect woman,*	My priority in life is to settle down with the **right woman**. (*Doc09, Doc14, Eng07, Gen05, Gen11, Gen16, Oil01, Oil03, Oil11, Oil12*)
MENTAL	*intelligent woman/lady, honest woman, smart lady*	You are/You're (such) a good and **honest woman.** (*Doc03, Doc14, Gen08*)
UNIQUENESS	*amazing woman, special woman, real lady*	You are/You're (truly/such) an **amazing woman** (*Celeb01, Doc14, Gen01, Gen14, Gen20, Gen27, Unicef01*)

Table 9
Attributes of male participant: *man, gentleman*.

Dimension	Adjective + *man*	Corpus example
goodness	*nice man, good man,*	I am/I'm a good man. (*Doc14, Gen27*)
attractiveness	*true man, well-mannered gentleman*	I am the true man for you. (*Doc03*)
piety	*God-fearing man*	I am a God fearing man, I do have my Christian faith to credit for my life, attitude and success (*Doc01, Doc02, Doc15, Eng06, Eng15, Gen02, Gen04, Gen13, Gen14, Gen28, Oil09, Oil11*)
wealth	*wealthy man, rich man*	I am a wealthy man. I am not a poor general and my money will also be yours (*Gen01*)
suitability	*right man, perfect man, ideal man*	I am the right man for you now (*Gen25*).
mental	*romantic man, traditional gentleman, passionate gentleman*	I am a sincere, honest, dedicated, responsible, romantic, and passionate gentleman with a good sense of humor and strong values (*Gen11*)
uniqueness	*real man*	I am a real man and real men don't fight with their women (*Doc01, Eng07*)

Table 10
Philanthropic activities.

Philanthropic activities	
Orphanage	I usually visit the motherless baby home every holiday to spend some quality time with the **orphanage children** there. (*Doc14, Eng07, Gen01, Gen05, Gen12, Oil01, Oil03, Oil07, Oil11, Oil12*)
Hospital	I want/plan to build a **hospital** (*Doc14, Gen01, Gen16*)

Table 11
Endearments.

Category	Modifier		Corpus example
supernatural being	*goddess*	*enchanting*	You look so **enchanting**, highly like **goddess** (*Doc10, Eng04, Eng16, Gen06, Oil09*)
	angel	*beautiful,*	I love the most **beautiful angel** in the world (*Unicef01*)
FEMALE RULER	*queen*	*beautiful, beloved, amazing, gorgeous, darling, precious*	You're my **beautiful queen**, whom God has sent into my life to be the queen of my life. (*Unicef01*) How are you feeling now, my **beloved queen**? (*Doc09*) Permit me to call you my **gorgeous queen**. (*Gen14*) how happy I am to have you as my **precious Queen** (*Doc 14*)
	princess	*beautiful,*	Good morning, **beautiful princess** (*Gen18*)

Table 12
Dimensions of *smile*.

Dimensions	Adj. + *smile*	Corpus example
GOODNESS	*wonderful smile, perfect smile, excellent smile, great smile*	Where do you get that **wonderful smile** from? (*Gen11*) Wow what an **excellent smile.** (*Eng05*)
ATTRACTIVENESS	*beautiful smile, lovely smile, cute smile, gorgeous*	Welcome the dawn and new day with your **beautiful smile**. (*Gen05, Oil07*) I miss you and your **gorgeous smile.** (*Gen08*)
RADIANCE	*warm smile, glowing smile, bright smile, sparkling*	Making sure you have a **bright smile** on your beautiful face (*Oil03*) Your **sparkling smile** gladdens my heart (*Tires01*)
DURATION	*endless smiles*	Having you alone as friend has put an **endless smiles** on my face (*Gen09*)
EMOTION	*cheery smile, loving smile, sweet smile*	All I need to start my day is your **cheery smile** (*Gen05*) I can see that in your **loving smile** on your face. (*Gen05*)
SIZE	*big smile*	Always start your day with a **big smile** i (*Gen01*)

honest). *Trust* is also closely related because "if you trust someone, you believe that they are honest and sincere and will not deliberately do anything to harm you". In other words, *trust* is the belief that someone possesses the other three qualities (i.e., honesty, truthfulness, and sincerity).

The importance of these qualities is reflected in the fact that all of them co-occur in the same context in the corpus, as reflected in their relatively high LogDice scores (see Table 13).

As shown in Table 13, the combination of these qualities is a key factor in the construction of love fraud relationships. The victim should never tell lies (*truthfulness*), say what she really believes (*sincerity*), not

Table 13
Co-occurrence of *sincerity, trust, truthful,* and *truth* with *honesty*.

Collocates of *honesty*	Co-occurrences, range from −2 to +2	Occurrences in whole corpus	LogDice score
concordance size	95		
sincerity	17	52	11.88779
trust	24	584	10.17769
truthful	4	38	9.94472
truth	4	168	8.96108

be deceptive (*honesty*), and always believe everything that the fraudster says (*trust*). A solid foundation of rapport and trust not only confirms the fraudster's credibility in the victim's mind but also causes her to ignore red flags (Carter 2024, p. 17). As shown in Table 14, the repetition of the same phrases by different fraudsters indicates that this is a standard part of many love fraud formats.

4.4. Relationship: stages

In love fraud, a relationship is a process that occurs in the following sequence: (i) FRIENDSHIP; (ii) 'SOULMATESHIP'; (iii) ENGAGEMENT; (iv) MARRIAGE. As the relationship progresses, the fraudster seeks a stronger commitment from the victim. Throughout the corpus, there are recurring sentences and phrases that reflect the fraudster's objective. One of the most frequent is *a relationship that leads to marriage,* which appears with slight variations throughout the entire corpus (Table 15).

4.4.1. Friendship

The first phase of this false relationship is friendship, which begins as soon as the victim accepts the friend request. The participants agree to maintain a *genuine/ true/ good* friendship (see Table 16).

The most frequent verbs that co-occur with *friendship,* either as an object or subject, transmit the idea that *friendship* must be *built* (LogDice 10.55), and when friendship is finally gained, it must be *valued* (LogDice 11.25). The participants are *friends.* The dimensions for this role are all positive, and used by the fraudster to compliment the physical, mental, and emotional attractiveness of his new friend (see Table 17). Especially interesting is her uniqueness because the fraudster's eventual request for money will be based on her status as his only friend.

4.4.2. Soulmates

The next stage in the relationship is 'soulmateship'. A soulmate is a person with whom one has a strong affinity, shared values and tastes, and usually a romantic bond. *Soul mate/soulmate* is most frequently paired with *partner* (LogDice 9.49) and *friend* (LogDice 7.31) .

In the context of romance scamming, 'soulmateship' is a deeper kind of relationship than friendship. It is during this stage that the fraudster usually mentions marriage as a goal for the future. In fact, this is a standard phrase in formats.

(3) when it comes to marriage, there's actually nothing superior than being with your soul mate, someone who truly adores you,

understands you, cherishes and loves you the way you are (*Doc04, Doc09, Doc14, Eng05, Eng07, Eng16, Gen05, Gen08, Oil03, Oil11*)

The seriousness and solemnity of this relationship is reflected in Table 18, where the examples sound more like marriage vows:

When the victim agrees to be the fraudster's soulmate, their relationship is taken to a much higher level. However, even though she may believe that she is now in a true relationship, the fraudster views this deeper commitment as a way to oblige her to send money when the crisis arises.

4.4.3. Engagement: fiancé, fiancée

Engagement is the phase that follows 'soulmateship'. It materializes in the roles of *soul mate* and *fiancée,* which are quasi-synonyms in love fraud. There is thus little or no talk of engagement or being engaged since 'soulmateship' and engagement mean the same thing.

Fiancé and *fiancée* appear in the corpus as roles indicating a marriage contract. They are the terms used when the fraudster asks the victim (now his *fiancée*) to write to his employer on his behalf. The reason for doing this depends on the type of deception, which is related to his job, and which usually involves a third entity.

For example, in love fraud, an American five-star general is allowed to retire (for a fee) if his wife or fiancée sends a written request to the US government or the United Nations. Alternatively, she may be asked to receive his possessions when a warehouse is under attack, and he is forced to urgently dispatch all of his belongings to her in 48–72 h. However, all of this has a price tag.

In the case of UN doctors, the fiancée is the one that must request his vacation leave. The cost varies, depending on the length of the vacation. Oil riggers must pay a fee to terminate their contract early. Once again, their fiancée is the one that must send the money for this.

Engineers working in a far-off land usually have a box of gold bars, which must be shipped off very quickly (to their fiancée) or be confiscated by the government. Finally, a fiancée is also extremely important when being engaged is the condition for claiming an inheritance.

In this stage of the relationship, the victim is requested to contact a third party, usually a Diplomat, Security Company, or Oil Company, who is in charge of 'billing the client'.[7] When the victim expresses her dismay at the price, the fraudster also deplores the cost. However, the only way that they can be together is if this amount is paid. Table 19 shows the various contexts in which *fiancé* and *fiancée* are used in love fraud.

4.4.4. Marriage: husband, wife

The final stage of the relationship-building process is *marriage.,* which has always been the fraudster's goal:

(4) I'm looking for a lady, who's ready for a serious relationship that can lead to **marriage**, a sincere, honest, caring, understanding and loving lady to spend the rest of my life with (*Oil01, Oil03, Oil11, Doc09, Gen16, Gen19*)

As shown in Table 20, marriage is also directly linked to the previous phases of RELATIONSHIP.

Even though the marriage cannot really take place, it still seems to occur. The participants in a marriage are a *wife* and *husband.* As shown in Table 21, the phases of wifehood begin when the fraudster says from the first moment, that he knew that he would marry the victim. In the second phase, the fraudster uses another standard phrase to state what will happen when she finally becomes his wife. The final stage is an actual marriage proposal followed by the (linguistic) consummation of their marriage. This is when the fraudster begins to call the victim his *wife* and

Table 14
Personality attributes; *honesty, sincerity, trust, trustfulness.*

honesty, sincerity, trust, truthfulness	Corpus example
honesty + sincerity + trust + truthfulness	The secret to be good friendship, is being a good listener, understanding of each other **trust, truthful, honest, sincerity**, believe, exchange of good Ideas and wiliness to help and assist each others in Life (*Capt01*)
honesty + sincerity + trust	I will appreciate us being good friend in **sincerity, honesty** and **trust**. (*Doc04, Doc14, Eng04, Gen05, Gen06, Gen26*)
	I'm more interested in making good friendship with you in **honesty, trust**, and **sincerity**, even though we just met each other. (*Doc03, Oil12*)
	A Relationship is all about **TRUST, SINCERITY** and **HONESTY** (*Doc14*)
honesty + trust	Without **honesty**, love gets unhappy, and without **trust**, love gets unstable. (*Doc04, Gen04*)
	What matters most is your **honesty** and **trust** for this relationship to work out. (*Doc15, Eng04, Gen04*)
trust + sincerity	All I need in a woman is care, **trust**, understanding, **sincerity**, faithfulness and respect in order for us to spend the rest of our lives together. (*Doc04, Doc09, Eng05, Eng07, Eng16, Gen01, Gen26, Oil01, Oil03, Oil11*)

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[7] Term used by scammers in Nigeria for the payment phase of love fraud. Personal communication from anonymous source.

Table 15
A relationship that leads to marriage.

a	relationship	that				leads to		Marriage
long-time serious truthful		can could will would	even	later	lead to	a fruitful		

Table 16
Modifiers of *friendship*.

Modifier + *friendship*	Co-occurrences (range from −2 to 0)	Occurrences in whole corpus	LogDice score
genuine	4	22	10.79055
distance	4	152	9.32757
TRUE	10	857	8.49379
good	6	3400	5.83175

Table 17
Dimensions of FRIEND.

Dimension	Adjective + noun	Corpus example
goodness	*good friend, best friend, great friend, excellent friend*	I think I think a good relationship requires being each other's **best friend**, and trusting one another (*Doc01, Gen09, Gen24, Oil14*)
attractiveness	*beautiful friend, lovely friend*	Hope you slept well my **beautiful friend** (*Gen09*)
surprise	*amazing friend, wonderful friend*	It is not every day that one finds such a **wonderful friend** as you have proved yourself to be (*Tires01*)
affectivity	*dear friend, dearest friend*	I am glad to call you my **dear friend** (*Gen01*)
mental	*faithful friend, true friend, honest friend*	a second spent with a **true friend** is worth more than years spent with the society (*Gen14*)
uniqueness	*special friend, only friend*	I want to thank you for being such a **special friend** of mine (*Gen05, Oil12*) You are the **only friend** I have (*Gen02*).

Table 18
Commitment in 'soulmateship'.

Commitment	Corpus examples
eternity	You are my **soulmate**, and I vow to love you until the day that eternity is gone. (*Gen19*)
lifetime	You are my heart of hearts, my **soulmate**, friend, lover and partner for life. (*Celeb01*) Can you Love and cherish me and accept me and as your **soul mate** and life partner (*Eng09*) I'm in search of a **soul mate** to spend the rest of our lives together. (*Doc14*)

thus creates the illusion of being married.

By elevating the victim's role to wife, the fraudster is preparing her for the crisis and request for funds since married partners are expected to financially assist each other (Carter 2024, p. 50).

The phases of 'husbandhood' (Table 22) are slightly different because the fraudster uses the conditional phrase, namely, "if I become your husband". The actual marriage proposal is in the form of a promise or a vow. The final stage is when the fraudster self-describes himself as the victim's husband.

Soon after the marriage is linguistically consummated, an emergency situation or crisis arises in which the victim is expected to support her husband, and send money. The fact that the fraudster calls himself her husband emphasizes the "increased responsibility spouses have for each other's wellbeing, financial or otherwise" (Carter 2023, p, 45), and is a way of pressuring her to send the funds. The relationship will last as long

Table 19
Obligations of a *fiancée* to her *fiancé* in the love fraud event.

Job	Corpus examples
US General [vacation leave]	you are writing on behalf of your **fiancé** for an immediate vacation home for his family (*Gen06*)
UN doctor [vacation leave]	You (my **fiancée**) have to apply for the vacation. So he gave me the UN vacation department Email, and said you have to message the UN vacation department (*Doc09*)
Oil rigger [contract termination]	We are in acknowledgement and receipt of your mail regarding the Leave Permit of your **fiance**, and he has also sent us a confirmation email. [...] with request content of duty discharge of contract termination (Oil company that employs *Oil03*)
Engineer [transport of box of gold]	I have already written [...] to the company for their approval to allow my **fiancée** [...] to help me these valuable and safeguard them for me (*Eng05*)
Retired UNICEF director [inheritance claim]	I told them i have a **fiancée** that it's the fund that's keeping us not to be married yet that after claiming the fund we will get married (*Unicef01*)

Table 20
MARRIAGE linked to other relationship types.

Marriage + relationship	We need care, understanding and mutual feelings to make our **relationship**/**marriage** stronger and everlasting (*Doc14, Gen11, Gen16, Oil07, Oil09*)
Marriage + friendship	The **friendship** between a man and a woman which does not lead to **marriage** or desire for **marriage** may be a life long experience of the greatest value [...] but for this type of **friendship** both a rare man and a rare woman are needed (*Eng04, Oil09*)
Marriage + soulmateship	when it comes to **marriage**, there's actually nothing superior than being with your **soul mate** (*Doc04, Doc09, Doc14, Eng05, Eng07, Eng16, Gen,08, Oil01, Oil03, Oil11, Oil12*)

Table 21
Phases of wifehood.

I always knew you would be my wife	It only took one look (at you) to know you were going to be my **wife** (Gen25, Unicef01). I am well convinced that you have every quality a man needs in a **wife**. (Eng05)
If you become my wife	If [...] you finally become my **wife**, I will love you [...], respect you, care for you, cherish you. (*Doc01, Doc04, Doc09, Doc14, Eng07, Gen05, Gen11, Gen26, Oil01, Oil03, Oil07, Oil09, Oil11, Oil12*)
Will you be my wife?	I will be proud of you as my **wife** if everything eventually works out (...will you marry me....? (*Gen02. Gen20, Gen28*)
You are now my wife.	May you have a merry and cheerful day, my beautiful **wife** (*Gen05*) I love you to the moon and back my sweet darling **wife**. (*Gen01*)

as she is sends him money.

5. Conclusion

This study has semantically analyzed the love fraud event with a focus on RELATIONSHIP, its stages, and participants within the context of

Table 22
Phases of husbandhood.

If I become your husband	How would you treat me if I eventually become your **husband**? (*Doc04, Doc09, Doc14, Gen26, Oil01, Oil03, Oil09, Oil11, Oil12*)
Will you accept me as your husband	If you can accept me in your life as your future **husband** (*Doc03*)
	It is my promise to be the best **husband** to you, and I will never fail to fulfill it (*Gen01*)
I am now your husband	I'm who I am and your **husband** (*Gen25*)

Frame Semantics, more specifically, the PERSONAL_RELATIONSHIP frame, superimposed on the INTENTIONAL_DECEPTION frame.

A corpus of 1043,330 words, consisting of 83 conversations between different fraudsters and the author was uploaded to SketchEngine, and data regarding the frequencies as well as the most frequent co-occurrences of key concepts were extracted. This helped to identify the main semantic categories and dimensions of the love fraud event and its participants, and trace how fraudsters construct a false relationship with the victim that progresses from friendship to marriage. Despite the contrived nature of the conversations, the results provide lexical data that support the findings of other research on the language of love fraud (e.g. Carter 2023, 2024).

As previously mentioned, limitations include the fact that this research was not planned as a formal linguistic study from the outset. In addition the data may have been biased to some extent because both the fraudsters and the author were engaged in a process of mutual deception.

Nevertheless, the LoveFraud02 corpus, despite its possible flaws, adds to the information regarding the love fraud event and contributes further information and evidence, regarding the way that fraudsters linguistically manipulate their victims. The results obtained are valuable because they show how each fraudster recruited the victim and patiently guided her through a relationship, which began with friendship, progressed to 'soulmateship', and in many cases even ended in proposals of marriage. The use, co-occurrence, and repetition of the same words and phrases seem to indicate that different fraudsters use similar scripts in the deception process. They also underline the fact that words such as *relationship, friendship, soulmate, marriage, love, trust, honesty,* and *sincerity* were systematically used to engage the victim and make her receptive to subsequent requests for money.

These semantic co-occurrence patterns and lexical regularities not only empirically support the results of other researchers on the language of love fraud but could also add to the resources used by Suarez-Tangil et al. (2020), who have worked on developing automated detection systems using machine-learning methods. They could also be applied to the automatic content-based detection of love fraud and the use of linguistically-based methods for the detection of deceptive discourse.

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Pamela Faber: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

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