The role of dependence as a moderating variable in the model of financial predation – a general appraisal

Mesly, Olivier
Lévy Mangin, Jean-Pierre

*Abstract*

This multidisciplinary paper discusses the role of dependence in the consolidated model of financial predation (CMFP), a model that in part resulted from research on the concept of marketing predation, which was originally identified early in the twentieth century with the creation of the Sherman Act in the United States. Applied to the financial sector, the notion of predation refers to so-called “white-collar bandits” (financial advisors) who have a talent for luring their clients-turned preys. It is argued that dependence in an interpersonal selling relation between a client and a financial advisor acts as a moderator between the constructs of perceived predation and trust. As such, the client’s dependence on his financial advisor can have various forms, which in all events lead to vulnerability and which this advisor is prompt to capitalize upon. Identifying dependencies on the part of consumers could help in devising better control systems to limit financially-driven predatory behaviors.

*Keywords:*
Perceived predation, Consolidated model of financial predation (CMFP), Mediator, Dependence.

*JEL classification:*
P46, D18.
El papel de la dependencia como una variable moderadora en el modelo consolidado de depredación financiera (CMFP) – una evaluación general

Mesly, Olivier
Lévy Mangin, Jean-Pierre

Resumen
Esta investigación de carácter multidisciplinario analiza el papel de la dependencia en el modelo consolidado de depredación financiera (CMFP), se trata de la extensión del concepto de depredación de comercialización cuyo origen radica a principios del siglo XX con la creación de la Ley Sherman en Estados Unidos. Aplicada al sector financiero, la noción de depredación financiera cobra su importancia con los llamados "White Collars" personajes con talento especial para atraer a sus clientes (llamados presas). En una relación de venta entre un cliente y un asesor financiero se dice que la dependencia actúa como moderadora entre los supuestos de la depredación percibida y la confianza. Como tal, la dependencia del cliente con su asesor financiero puede cobrar varias formas que conducen a la vulnerabilidad y de la que el asesor sacará beneficio rápidamente. La identificación de distintos niveles de dependencia por parte del consumidor podría ayudar a diseñar mejores sistemas de control con propósito de limitar comportamientos abusivos de dominación financiera.

Palabras clave:
Depredación percibida, modelo consolidado de depredación financiera (CMFP), mediador, dependencia.
1. Introduction: Predatory behavior and dependence in a sales encounter

There have been few studies on the effect of dependence between a client and his financial advisor, let alone in the context of the theory of financial predation. Neurobiological evidence and past marketing research point to this model (see section below) as a possible means of explaining how clients fall prey to financial predators during interpersonal relations (Mesly and Lévy-Mangin, 2012). In 1985, Szwajkowski coined the term “white-collar crime”, but the realization of such phenomenon has not prevented the reoccurrence of financial crises over the last decades (Rajan, 2010). Many of these crises have been the results of abuse in the system – the predatory mortgage crisis of 2008 being a case in point. In 1994, Morgan and Hunt used the term predation but the term has not been part of marketing theory even though economic predation is well-known since the early 1900’s (e.g. Sherman Act). As Shapiro and Burchell (2012, p. 92) put it: “There is a scarcity of information concerning the emotional aspects of financial management”. Yet, one must recognize that limiting opportunistic or pure predatory behaviors on the part of financial experts, such as Bernard Madoff, can only improve society. To serve this purpose, this paper proposes to analyse the consolidated model of financial predation (CMFP) put forth since 2007. This model is based on five key constructs: perceived predation, trust, equilibrium, cooperation and relationship atmosphere.

However, in this model, one variable seems to be missing, that of dependence.

1.1. Structure of the present article

We first review the consolidated model of financial predation based on a database consisting of multiple studies involving 1160 participants done between 2007 and 2012 (for the model, see Figure 1 and Appendix 5; for data see Appendix 6). We discover that there is a possibility of dependence being a moderating variable. However, as our conclusion is statistically too weak, we decided to run a second study (between September and October 2012) and thereafter ran a structural equation modeling using PLS on n= 348 (see Appendix 7). In the second main part of this paper, we thus discuss how the moderating effect of dependence in the consolidated model of financial predation is confirmed, within the boundaries of this second research’s limitations. In the third section of this paper, we discuss how this finding can help improve the consolidated model of financial predation and how it can perhaps explain some key predator-prey dynamics encountered in the financial world. Why do clients depend so heavily on their financial advisor? Is there an element of

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1 This model has gone through several improvements since 2007 and is now called the consolidated model of financial predation (CMFP) because it merges two areas of investigation: marketing research and neurobiological research. In a 2013 study using fMRI techniques, the CMFP appears to find strong neurobiological support (published results are forthcoming).
dependence that comes into play, reducing (moderating negatively) perceived predation in favor of blind trust, at least for some of those clients? We close the paper with a review of key findings and an overview of the present paper’s limitations.

2. Review of sales and marketing literature

Sales and marketing literature has discussed the fear customers and salespeople can experience, without delving into predation or financial advisors per se. For example, Verbeke and Bagozzi (2000, p. 88) propose that, in the context of the theory of SCA (sales call anxiety) “sales call anxiety is an irrepressible fear of being negatively evaluated and rejected by a customer, and it is coupled with a desire to avoid undertaking specific functional actions in selling situations.” While this view falls into the concept of perceived predation (the idea that the other party can act as a predator), the dynamic here is reversed compared to the one when examine in the present paper. The perspective of these authors is that of the seller being a potential prey, and thus the buyer being a potential predator. In the same vein, Wood et al. (2008) emphasize the role of conscious or unconscious cues in managing perceptions, which would justify the presence of fear or not, thereby leading to construction or avoidance of trustworthiness. Indeed, there can be unconscious negative cues that affect relationships and that are to be incorporated within the construct of danger: the dyadic party (e.g. salesperson) can indeed be a source of danger (Stratford, 1996). However, these social judgment heuristics do not account for how dependence plays a role within interpersonal selling conditions (including with respect to financial advisors) nor do they convey the idea that behaviours can change as a consequence of anxiety (anxiety could, for example, slow down a potential sales – see Weitz, 1981).

As much as a negative perception of a salesperson and in particular of financial advisors can, consciously or unconsciously, limit if not ruin the possibilities of closing a sales call, so too can the lack of understanding of a consumer’s motivation. Motivation is usually associated with a need or a desire, but it could be maladaptive and in fact be heavily driven by dependence (towards the product, the sales person, the organization, etc.). Dependency can actually blur the consumer’s decision process and render negative what should normally be a positive experience, hence the importance to pinpoint the true motivation of a purchase intention (Mallalieu and Nakamoto, 2008). Beyond measuring customers’ profile with such attributes as sociodemographics, habits and involvement or commitment to the brand or product (O’Hara et al., 1991) we contend that determining the level of dependence of the customer can help qualify the relationship a buyer has with a financial advisor, be it positive or negative.

While dependence has been studied or even put in the context of power relations in marketing (e.g. Zhuang and Zhou, 2004), results seem contradictory. Studies on
dependence discuss it in the context of business-to-business relations, including in the retailing and channel distributions systems (e.g. Jacobs, 1974; Anderson and Narus, 1990; Provan and Gassenheimer, 1994; Andaleeb, 1996; Panga and Wub, 2009), economy (Arthur, 1994), or in terms of relationships to brands, but not in interpersonal term, which is the focus of the present paper. Interpersonal dependence is otherwise discussed in articles on health, psychology, sociology, gerontology and clinical care, which are fields of expertise that fall outside the scope of marketing as discussed here in terms of moderating variable within a (non-industrial) client-financial advisor relationship. The closest findings in terms of links between dependence and trust (or, indirectly, of vulnerability as trust entails acceptance of vulnerability) come from Svensson (2004) in his study in the Swedish car industry, but the moderating effect of dependence from an emotional point of view is not proven (instead, the focus is on economic, judicial, technical, market and IT dependence). We postulate that dependence is, along with trust, a key component of attachment (Bowlby, 1973, p. 295). In this respect, the literature points towards dependence as being a moderating variable (Vlachos et al., 2010) between a client and a firm.

Furthermore, none of the studies in the marketing literature that analyse dependence have been based on neurobiological evidence. The present paper endeavors to rely on the theory of financial predation which has been found to be corroborated by neurobiological facts (Mesly, 2012a; see Appendix 4). Since the role of dependence has been so far ignored in that model, this paper discusses a series of new studies that point towards dependence as being a moderator acting between the construct of perceived predation and that of trust.

3. A study leading to the valuation of the consolidated model of financial predation from marketing and neurobiological perspectives

As mentioned, we retrieved a database of $n=1160$ consisting a studies performed between 2007 and 2012 out of which multiple articles on financial predation had been published (Mesly, 2007-2012, 2012 a, b, c; 2013, 2013a, b; Mesly et al., 2012, 2012a). We proceeded to analyse these data and to build the consolidated model of financial predation (CMFP) as it is known, trying to identify the role of dependence in the process.

In these studies spreading over five years, the following constructs were measured: perceived predation, trust, cooperation, equilibrium, atmosphere, and dependence. Perceived predation is to the perception of say a used-car (or portfolio) salesperson what perceived risk is to the perception of the used (the investment portfolio) car itself. Trust is the will-
ningness of one party to put oneself in a state of *vulnerability* towards the other party assuming this other party is well-intentioned. *Cooperation* is the action taken by both parties for the purpose of completing a task at hand or meeting an objective. *Equilibrium* refers to a sense of win-win between the two parties, that is, the client and the salesperson (the financial expert). *Atmosphere* refers to the general mood in which the two parties are when interacting. *Dependence* on an individual basis (as opposed to an organizational basis) refers to the fact that one party cannot live, in part or in full, without the presence or the actions of the other party.

We ran a number of statistical tests and obtained the significant results, as discussed below.

### 3.1. Structural Equation Modeling (SEM) analyses

Our first effort was to run a SEM given that the sample size was large enough, in order to provide us with a general view of the model (this model in its embryonic developmental stage resembled Anderson and Narus’ 1990 model). The best model that came out from the database is as follows (Figure 1):

![Figure 1. SEM Model (CMFP) for n=1160 (standardized estimators)](image)

With the following indices (Table 1);

<table>
<thead>
<tr>
<th>Adjustment indices (fit)</th>
<th>Key value</th>
<th>Actual values</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMSEA</td>
<td>$&lt; 0.05 = $good fit</td>
<td>$0.025$</td>
</tr>
<tr>
<td>CFI</td>
<td>$&gt; 0.90 = $good fit</td>
<td>$0.999$</td>
</tr>
<tr>
<td>IFI</td>
<td>$&gt; 0.90 = $good fit</td>
<td>$0.999$</td>
</tr>
</tbody>
</table>

We take note of the following two observations:

**Observation 1:** the model fit seems excellent; thus, we are tempted to keep it for the purpose of finding a role for dependence.

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2 The questionnaire developed to measure these constructs is called the MESLY questionnaire (Mesly, 2010). It can be made available upon request.
Observation 2: we could not position the variable *dependence*, which is a first sign that it is a moderating variable: moderators do not behave in a single linear fashion (e.g. they lead key variables they affect in different directions).

3.2. Explanation of the model

The model that resulted from the SEM, dubbed the consolidated model of financial predation, can be explained as follows. People tend to express a certain level of vigilance towards others – for example, a potential car buyer walks into a used car dealership and is immediately on the defensive, thinking the used car salesperson is there to sell him “a lemon”. Similarly, an investor will check on the reputation of a financial advisor and initially only trust him with a minimal amount of money.

Perceived predation naturally influences trust negatively (-0.16). Predation has been defined as the act of abusing someone else’s vulnerability. Trust on the other hand is closely linked to vulnerability as it is accepting to be vulnerable to the actions of the salesperson (car salesperson or financial advisor) based on the expectation that he will act positively, irrespective of the capacity to monitor him (Mayer *et al.*, 1995; Bell, Oppenheimer and Bastien, 2002; Riedl and Javor, 2012). There is thus a direct link between perceived predation and trust.

It is at times possible to cooperate given absence of trust (e.g., one may be obliged to cooperate in a group project); however, sales encounters depend on trust, which necessarily develops over time.

Trust and cooperation work hand in hand (0.72); the more the buyer trusts the salesperson, the more he will be willing to divulge information, and the more both exchange valid information, the more they tend to trust each other.

Equilibrium measures the cognitive efforts aimed at determining whether the relationship is fair, that is: “Am I in a win-win situation?” (Bolton and Ockenfels, 2005). Cooperation eventually causes the establishment of a good negotiating atmosphere (Grönroos, 1994) whereas poor cooperation necessarily brings about conflicts or distance between the negotiating parties (see Appendix 4).

In the consolidated model of financial predation, two core dynamics (or “positions”) are considered: that of prey and that of predator. In the context of the current paper, the preys are the clients that get lured by the financial experts and end up losing their life savings (victims), and the predators are, of course, these malevolent financial experts, some of whom excel at taking advantage of their naive, trusting clients (soon-to-turn preys).
The consolidated model of financial predation developed into the following (see Figure 2) which takes into account macro-behaviors generated over time in the context of a client-financial advisor relationship and the micro-phenomena that occur within the brain (see Appendix 5). We posit for now that dependence is a moderator between perceived predation and trust (Figure 2):

Figure 2. A consolidated model (CMFP)
3.3. Construct values

The construct values associated with our database have been found as follows (Table 2):

Table 2. Values and factorial analysis

<table>
<thead>
<tr>
<th>Predator</th>
<th>Prey</th>
<th>Trust</th>
<th>Equilibrium</th>
<th>Cooperation</th>
<th>Atmosphere</th>
<th>Dependence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>in %</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average</td>
<td>3.9</td>
<td>78</td>
<td>76</td>
<td>75</td>
<td>76</td>
<td>65</td>
</tr>
<tr>
<td>Minimum</td>
<td>1</td>
<td>18</td>
<td>14</td>
<td>18</td>
<td>24</td>
<td>14</td>
</tr>
<tr>
<td>Maximum</td>
<td>7</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Observation 3: Trust, equilibrium, cooperation and atmosphere are in the same range (confirming a relational interaction between the parties – see Appendix 1³). Dependence, however, seems to pertain to a different plan (65%). This may be a second cue that it is a moderator beside the fact that the first SEM did not convey a significant role for it in the model.

3.4. A non-linear relationship exists between perceived predation and trust – the law of perceived predation

Perceived predation and trust are intimately linked through the construct of vulnerability (as explained above, trust is the willingness to make oneself vulnerable towards another person in the belief this other person has good intentions).

However, this relationship is not quite linear; yet, the SEM model shows that there is a significant estimator between the two constructs: perceived predation and trust.

When we plot perceived predation and trust (in various formats, for example, predator/prey which is the reverse of perceived predation prey/predator; or “negative trust”, assumed to be 100- trust with trust being measured on a scale of 0 to 100) we obtain the following result (Figure 3):

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³ Past studies using factorial analyses on multiple groups have shown that, systematically, when the ratio of predator to trust tends towards 0, the value of trust, cooperation and equilibrium tend towards 1. Conversely, when the ratio predator/prey (one’s own strengths over one’s own weaknesses) tends towards 1, the values for the constructs of trust, cooperation and equilibrium tend together towards zero. This has been defined as the law of perceived predation (Mesly, 2010-2013).
Perceived predation (feeling more weaknesses than strengths); PE_PO= the reverse of PO_PE or a proxy for self-confidence; vuln=100- trust, negative trust (adjusted).

**Observation 4:** There is somewhat of a mathematical relationship between the constructs under investigation. Past research (Mesly, 2012b) has shown that under normal stress conditions, the function is a rectangular hyperbola with a function of Predator/Prey= k/“negative trust” where k generally equals 1.3.

To better portray the fact that perceived predation and trust work antagonistically, we performed an exploratory factorial analysis, as follows (Table 3):
Table 3. A factorial analysis

<table>
<thead>
<tr>
<th>Component for n=1160</th>
<th>1</th>
<th>Tends towards</th>
<th>2</th>
<th>Tends towards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>0.905</td>
<td>1</td>
<td>0.114</td>
<td>0</td>
</tr>
<tr>
<td>Cooperation</td>
<td>0.902</td>
<td>1</td>
<td>0.198</td>
<td>0</td>
</tr>
<tr>
<td>Equilibrium</td>
<td>0.8490</td>
<td>1</td>
<td>0.031</td>
<td>0</td>
</tr>
<tr>
<td>Atmosphere</td>
<td>0.836</td>
<td>-0.076</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Predator</td>
<td>0.200</td>
<td>≈1</td>
<td>0.801</td>
<td>1</td>
</tr>
<tr>
<td>Prey</td>
<td>-0.079</td>
<td>0</td>
<td>0.849</td>
<td>1</td>
</tr>
</tbody>
</table>

Predator vs. Prey > <

Varimax rotation, 3 iterations.

Observation 5: As can be seen, when the values of trust, cooperation, equilibrium and atmosphere tend towards 1, individuals feel more predator (strengths) than prey (weaknesses). However, as soon as individuals feel that have an equal amount of strengths and weaknesses, or else have less strength than weaknesses (vulnerability), the levels of trust, cooperation, equilibrium and atmosphere tend towards zero. This is referred to as the law of perceived predation and has been tested on over 26 groups over the course of 5 years (Mesly, 2010).

This law has been somehow put to test through a study by Todorov and Engell in 2008, with the following results (Table 4):

Table 4. The law of perceived predation in neurobiological terms

<table>
<thead>
<tr>
<th>Trait judgment</th>
<th>Valence evaluation</th>
<th>Associated construct or sub-construct using the consolidated model of predation</th>
<th>Associated main construct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trustworthy</td>
<td>0.95</td>
<td>Trust</td>
<td>Trust</td>
</tr>
<tr>
<td>Caring</td>
<td>0.91</td>
<td>Benevolence</td>
<td>Trust</td>
</tr>
<tr>
<td>Responsible</td>
<td>0.91</td>
<td>Integrity</td>
<td>Trust</td>
</tr>
<tr>
<td>Emotionally stable</td>
<td>0.91</td>
<td>Equilibrium</td>
<td>Equilibrium</td>
</tr>
<tr>
<td>Sociable</td>
<td>0.90</td>
<td>Atmosphere</td>
<td>Atmosphere</td>
</tr>
<tr>
<td>Attractive</td>
<td>0.79</td>
<td>Affinity</td>
<td>Trust</td>
</tr>
<tr>
<td>Intelligent</td>
<td>0.70</td>
<td>Problem resolution</td>
<td>Cooperation</td>
</tr>
<tr>
<td>Confident</td>
<td>0.63</td>
<td>Ability</td>
<td>Trust</td>
</tr>
<tr>
<td>Dominant</td>
<td>-0.30</td>
<td>Predator</td>
<td>Predator</td>
</tr>
<tr>
<td>Unhappy</td>
<td>-0.70</td>
<td>Atmosphere</td>
<td>Atmosphere</td>
</tr>
<tr>
<td>Aggressive</td>
<td>-0.75</td>
<td>Atmosphere</td>
<td>Atmosphere</td>
</tr>
<tr>
<td>Mean</td>
<td>-0.78</td>
<td>Atmosphere</td>
<td>Atmosphere</td>
</tr>
<tr>
<td>Threatening</td>
<td>-0.78</td>
<td>Predator</td>
<td>Predator</td>
</tr>
<tr>
<td>Weird</td>
<td>-0.85</td>
<td>Atmosphere</td>
<td>Atmosphere</td>
</tr>
</tbody>
</table>

Explained variance 62.9%

Observation 6: the model found using SEM seems to hold quite firmly. There is a clear link between perceived predation and trust.
We now continue to examine the links that were found among the other constructs in the SEM model.

3.5. A linear relationship between trust and cooperation

Many past marketing studies have confirmed or pointed out to the close bond between trust and cooperation (Anderson and Narus, 1990; Morgan and Hunt, 1994; McAllister, 1995; Palmatier et al., 2006). We obtained similar estimators and $R^2$ using different measuring tools (the Mesly questionnaire, see Mesly, 2010), which tends to confirm that the model is not an aberration coming out of erroneous measurement. Figure 4 shows the linear regression and the structure of residuals (which is found acceptable).

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4 After verifying for normality of populations and residuals, $p < 0.05$.

5 As previously mentioned, this questionnaire measures the constructs pertaining to the CMFP. It has been in use since 2009 and tested for its psychometric value on several occasions (see Mesly, 2010). Measures for trust as a latent variable come from four sub-constructs: affinity, benevolence, competence and integrity. Measures for cooperation as a latent variable come from four sub-constructs: flexibility, exchange of information, common problem resolution and “client” or “supplier” orientation. For further details, see Mesly 2010-2013.
Observation 7: the simple linear regression adopts a clear elliptic shape, which is a sign that it holds value.

Observation 8: The $R^2$ is at 0.745, $F=3383.768$, $p=0.000 (<0.005)$. This is line with past research and also with the estimator found in the SEM model (0.72).

So far, the model seems to hold quite strongly and is supported by past research, including some in the marketing and neurobiological fields (Mesly, 2010-2012, 2012 a, b, c; 2013 b). The next step is to test the construct equilibrium. To do this, we used Baron and Kenny’s 1986 technique.

3.6. Equilibrium as a mediating variable (using Baron and Kenny 1986’s method)

The SEM model points to the fact that equilibrium (a sense of win-win) is a mediating variable. We performed Baron and Kenny’s test6 (a widely used method, see Appendix 2) with results as follows (Table 5):

<table>
<thead>
<tr>
<th>Table 5. Equilibrium as a mediating variable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population ($n = 1160$)</td>
</tr>
<tr>
<td>Comment</td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>Significance at $p &lt; .05$</td>
</tr>
<tr>
<td>Trust =&gt; Cooperation</td>
</tr>
<tr>
<td>Coop. = 4.099 + $\mathbf{0.913}$ Trust + $\varepsilon$</td>
</tr>
<tr>
<td>Trust =&gt;Equilibrium</td>
</tr>
<tr>
<td>Equi. = n.s. + 0.947 Trust + $\varepsilon$</td>
</tr>
<tr>
<td>Equilibrium =&gt; Cooperation</td>
</tr>
<tr>
<td>Coop. = 27.257 + 0.630 Equilibrium + $\varepsilon$</td>
</tr>
<tr>
<td>Trust + Equilibrium =&gt; Coop.</td>
</tr>
<tr>
<td>Coop. = 3.736 + $\mathbf{0.760}$ Trust + 0.161 Equi. + $\varepsilon$</td>
</tr>
<tr>
<td>Trust coefficient change</td>
</tr>
<tr>
<td>Reduction</td>
</tr>
<tr>
<td>indicating a mediating variable</td>
</tr>
</tbody>
</table>

Observation 9: Equilibrium is indeed a mediating variable. The coefficient for trust diminishes when equilibrium is introduced in the multiple linear regressions with cooperation as the dependent variable.

Observation 10: Again the SEM model holds. It seems to make sense: if negotiating parties sense they can both win from the exchange, the more reasons they’ll have to trust each other and cooperate.

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6 The most used method for testing mediation in the marketing literature. It consists of measuring the strength of the connection between variable $A$ and variable $B$ ($B=f(A)\rightarrow B_0+\beta_1 A+\varepsilon$), variable $A$ and variable $C$ ($C=f(A)$) and variable $A$ and variable $B$ ($B=f(C)$), and finally between variable $B$ and $AC$ combined ($B=f(A,C)$). If the beta ($\hat{\beta}_1$) value for this last equation is lower than the value of the beta ($\hat{\beta}_1$) for the first equation, then it is assumed variable $C$ plays a role, that is a mediating role given there is indeed a significant connection between variable $A$ and variable $C$ and between variable $C$ and variable $B$. 
4. What to do with dependence?

There is a good chance that dependence (measured as a continuous variable) is a moderating variable acting between perceived predation and trust, as follows (Figure 5):

**Figure 5. Dependence as a moderating variable**

The reasoning for this is as follows: if someone feels dependent on someone else but that someone else is, say, unfriendly, trust will likely be affected, even though it remains necessary to keep the relationship alive due to this very factor of dependence (Anderson and Narus, 1990). A person could turn angry over this awkward situation. But then, given the same circumstances, another person may react differently and be subdued. There would be two opposite reactions given the same factor of influence: dependence. This is much in line with a definition of a moderator. We ran some linear regressions between the key constructs of perceived predation trust and dependence and indeed found some triangular distributions (see Figure 6):

**Figure 6. Triangular distribution for the dependent variable**

The two images correspond to our initial database of \( n=1160 \). The triangular shape is a strong indicator of moderation (McClelland and Judd, 1993).

Observation 11: the triangular distribution appears for both important constructs that deal with dependence: perceived predation and trust. In other words, dependence has...
the same kind of influence on both constructs. In addition, this influence is in the form of a triangular distribution. Those are two strong indices that dependence is a moderator.

To convince us further, we ran three-dimensional views of the constructs, starting with trust => Prey/Predator (on the top left of Figure 7 shown below, which displays quite clearly a linear distribution). On the top right row, we added dependence along the z axis. One can see how the data results are being spread. Dependence has a spreading effect – another possible indicator of a moderating effect. In the middle row to the left, we plotted trust => cooperation and to the right, we added the construct Prey/predator along the z axis. As can be seen, this does not have for effect to spread the data. However, the bottom row of the figure shows trust in x, cooperation in y, and dependence in z. The spreading effect is impeccably clear (Figure 7):

**Figure 7. A three dimensional view at a moderating variable**

![Figure 7. A three dimensional view at a moderating variable](image-url)
Observation 12: dependence is illustrated by triangular distribution and by the spreading effect on three-dimensional maps. Because dependence is likely to influence the entire model (for example, tests show it moderates the relationship trust $\Rightarrow$ equilibrium) and because we wanted to keep the model as simple as possible, we positioned dependence where it had the most significant sense, knowing that it would influence other parts of the model because all constructs are intimately linked.

Observation 13: It can be assumed that perceived predation has a negative impact on trust which may vary given the presence of dependence (moderator).

Observation 14: Dependence as a moderator between perceived predation and trust (which would then influence the other constructs such as cooperation) makes sense as explained earlier in this paper. If the individual were to be completely independent, no matter what the perceived threat would be, trust would not be affected. Each individual would be totally self-confident that he can face any threats no matter what the circumstances would be. Of course, realistically, trust implies some sense of dependence (relying on other people’s positive actions) so that dependence does indeed play a role.

4.1. An additional study using PLS

In line with the recommendations of Frazier et al., (2004), we decided to push our study further. We improved the Mesly questionnaire on perceived predation with respect to the variable “dependence” (as the initial Mesly questionnaire only contained one question on dependence) by adding two more non-additive questions and approached 348 participants found in a local community center. Our reasoning was as follows: if people in community centers feel dependent in a context that does not involve high stakes (e.g. playing bingo or curling) and out of which they can get out easily, then most probably, a client who has put his life savings in the hands of an investors would feel quite dependent.

The results strongly pointed towards dependence as a moderator, and a moderator active only between the construct of perceived predation and that of trust (Figure 8):

---

7 We decided not to run hierarchical multiple regressions to avoid possible drawbacks typically associated with this method (Lubinski and Humphreys, 1990) and because there were essentially only one independent variable (that of perceived predation).
Observation 15: Some level of dependence is noticed even in a context where there are minimal stakes. We can infer that there is at least the same amount of dependence between a client and his portfolio manager (see Mesly, 2012c for a study on a case involving 1,500 people who were duped by a financial scheme—see Appendix 8).

Observation 16: the model seems to hold and to suggest, given the different steps we went through throughout this paper, that dependence is indeed a moderating variable. This means that the relationship between perceived predation and trust must be put in context: people who feel very dependent on their financial advisor, for example, could potentially adopt two extreme behaviors: either trust him blindfully (as has been the case for clients turned victims in many scandals), or else become excessively vigilant.

5. Conclusion

Our initial quest was to determine whether dependence acts as a moderator within the framework of interpersonal relationships between a client and a financial advisor, or else if it plays no role in the consolidated model of financial predation. We first ran a SEM on a database of \( n = 1160 \) and found out that we could not fit dependence into the model at a significant level. Yet, the model proved sound from marketing and neurobiological points of view. In addition, when we examined the model piece by piece with linear regressions, we were able to corroborate our findings with the use of previous research done by other academics.

We then decided to use linear regressions to check the relationship between dependence and two adjacent constructs that we supposed it would modulate. We noticed that it had the similar effect—a triangular distribution, on perceived predation and trust. Thus,
dependence acted similarly with respect to these two constructs and it appeared fair to position it in between them. We also tested with other constructs and found some similar results, most notably between trust and cooperation. This is to be expected: a moderator carries its effect to the sequence of events that follows as it is by nature highly contextual. We initially decided to position the moderator where it likely originates to respect its potential for expansion to other parts of the model.

We used a three-dimensional approach to convince us of the spreading effect of dependence, another clue that it is a moderator. If it had a linear effect, it could not be a moderator; it would be an independent variable or a mediating variable, but certainly not a moderator.

In essence, we could argue with quite a large degree of comfort on the presence of dependence as a moderator. But we needed to find more scientific evidence. We amended the Mesly questionnaire on perceived predation by including stronger measures of dependency. We then recruited participants in an area where dependence would be unlikely ($n=348$); if it turned out that we could measure it, it would somehow indicate that the measuring instrument was performing well and that, indeed, when stakes are higher (for example, in the context of financial trading), dependence is likely to exist.

Results pointed towards dependence as being a moderator between perceived predation and trust, but not between other constructs. This is an important finding with respect to the consolidated model of financial predation, which so far had ignored the construct of dependence. Perceived predation and the dynamic of predation must take into account the moderating effect of dependence on trust and perceived predation. This effect will vary and at times be in opposite directions depending on individuals.

This means that dependence plays a role in the dynamic in an interpersonal relation linking a client and a financial advisor. Even though this paper has not specifically tested same, previous studies on victims of financial predators (e.g. Mesly, 2012c) seem to indicate that this relationship is highly contextualized with respect to dependence. In these past studies, it was noted that people who lost less to financial predators felt more independent than those who lost more (the landmark was found to be C$100,000). Also, all the victims tended to want to shy away from the financial predator as soon as possible; that is, they wanted to regain their independence (some of the results of the Mesly, 2012c research appear in Appendix 3).

Hence, the present paper sheds a light on the reasons as to why people fall prey to financial predators. They may have developed some sense of dependence (or in a more emotional condition, some sense of attachment) to their financial advisor to the point...
that they let their guard down and trust him blindfully\(^8\). Of course, a financial predator is intuitively aware of such vulnerability and will build on it: as an example, many financial advisor set conditions to deal with them (e.g. minimum amounts of investments, entry fees, and exit fees, etc.) for what seems to be a strategy to foster dependence.

While this research is limited in scope and deserves a wide-scale analysis in the specific field of finance (a taunting project), it provides an initial understanding on the role of dependence, which, for investors, could assist them in ensuring they do not fall prey to would-be financial predators.

### References


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\(^8\) A phenomenon which reminds of infants who up to 10 months old do not develop a sense of fear of foreign faces (Bowlby, 1973, p. 432).


Mesly, O. (2010). *Voyage au cœur de la prédation entre vendeurs et acheteurs- une nouvelle théorie en vente et marketing*, Université de Sherbrooke, Canada.


### Appendix 1: Tables of interpretation

<table>
<thead>
<tr>
<th>Construct</th>
<th>Value</th>
<th>Type</th>
<th>Emotional involvement</th>
<th>Type of commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>For Trust and cooperation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60% to 70%</td>
<td>60% to 70%</td>
<td>Transactional</td>
<td>Little</td>
<td>Almost indifferent</td>
</tr>
<tr>
<td>70% to 85%</td>
<td>70% to 85%</td>
<td>Relational</td>
<td>Moderate</td>
<td>Trust-driven</td>
</tr>
<tr>
<td>85% to 100%</td>
<td>85% to 100%</td>
<td>Interpersonal</td>
<td>High</td>
<td>Blind trust</td>
</tr>
<tr>
<td>Construct</td>
<td>K Value</td>
<td>Zone</td>
<td>Likely Emotion</td>
<td>Outcome</td>
</tr>
<tr>
<td>For predator or prey</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 and above</td>
<td>4 and above</td>
<td>Conflict</td>
<td>Hostility</td>
<td>Strenuous</td>
</tr>
<tr>
<td>2 to 4</td>
<td>2 to 4</td>
<td>Normal</td>
<td>Amicable</td>
<td>Lasting</td>
</tr>
<tr>
<td>For the Predator/Prey ratio</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Above 1.8</td>
<td>Above 1.8</td>
<td>Conflict</td>
<td>Hostility</td>
<td>Strenuous</td>
</tr>
<tr>
<td>1.2 to 1.8</td>
<td>1.2 to 1.8</td>
<td>Normal</td>
<td>Amicable</td>
<td>Lasting</td>
</tr>
<tr>
<td>Below 1.2</td>
<td>Below 1.2</td>
<td>Conflict</td>
<td>Hostility</td>
<td>Strenuous</td>
</tr>
</tbody>
</table>

For a full explanation relating to this core table, see Mesly (2010).
Appendix 2.
Examples of use of Baron and Kenny’s method\textsuperscript{10}

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Article name</th>
<th>Publication</th>
<th>Study subject</th>
<th>R\textsuperscript{2}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grayson, K. and Ambler, T.</td>
<td>1999</td>
<td>The Dark Side of Long-Term Relationships Marketing Services.</td>
<td>Journal of Marketing Research</td>
<td>Trust</td>
<td>0.12-0.22</td>
</tr>
<tr>
<td>Nicholson, C.Y., Compeau, L.D., and Sethi, R.</td>
<td>2001</td>
<td>The role of interpersonal liking in building trust in long-term channel relationships.</td>
<td>Academy of Marketing Science</td>
<td>Affinity</td>
<td>0.54 to 0.71</td>
</tr>
<tr>
<td>Lichté, M.-C.</td>
<td>2002</td>
<td>Étude expérimentale de l’impact de la couleur d’une annonce publicitaire sur l’attitude envers l’annonce.</td>
<td>Recherche et Applications en Marketing</td>
<td>Color</td>
<td>s/o</td>
</tr>
<tr>
<td>Joshi, A.W. and Sharma, S.</td>
<td>2004</td>
<td>Customer knowledge development: antecedents and impact on new product performance.</td>
<td>Journal of Marketing</td>
<td>Client</td>
<td>0.20 to 0.47</td>
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<tr>
<td>Attuahene-Guma, K.</td>
<td>2005</td>
<td>Resolving the capability-rigidity paradox in new product innovation.</td>
<td>Journal of Marketing</td>
<td>Orientation</td>
<td>0.21 to 0.43</td>
</tr>
<tr>
<td>Bart, Y., Shankar, V. Sultan, F. and Urban, G.L.</td>
<td>2005</td>
<td>Are the drivers and role on online trust the same for all web sites and consumers? A large-scale exploratory empirical study.</td>
<td>Journal of Marketing</td>
<td>Trust</td>
<td>s/o</td>
</tr>
<tr>
<td>Medina, F.J., Munduate, L., Dorado, M.A., Martinez, I. and Guerra, J.M.</td>
<td>2005</td>
<td>Types of intragroup conflict and affective reactions.</td>
<td>Journal of Managerial Psychology</td>
<td>Conflict</td>
<td>0.11 to 0.24</td>
</tr>
<tr>
<td>Zhang, Y., Feick, L. and Price, L.J.</td>
<td>2007</td>
<td>L’impact de la conception de soi sur les préférences esthétiques pour les formes angesculues ou les formes rondes.</td>
<td>Recherche et Applications en Marketing</td>
<td>Self concept</td>
<td>0.23 to 0.31</td>
</tr>
</tbody>
</table>

\textsuperscript{10} See Mesly (2010).
Appendix 3.
Some results of a study on financial predation (Mesly 2012c¹¹)

| Sample population (n = 26) for the Class action participants (Victim Group) |
|-------------------------------------------------|------------------|------------------|------------------|------------------|
| Experienced NOW by the victim (after the being defrauded)                     | Min.  | Max.  | Average | Standard deviation |
| Discouragement                                                             | 1.0   | 5.0   | 4.1     | 1.4            |
| Loss of self-esteem                                                         | 1.0   | 6.0   | 3.3     | 1.7            |
| Financial pain                                                             | 1.0   | 6.0   | 3.6     | 1.3            |
| Anger                                                                      | 1.0   | 5.0   | 4.5     | 1.1            |
| Stress                                                                     | 1.0   | 5.0   | 3.6     | 1.6            |
| Average Predation axis                                                     | 1.0   | 5.4   | 3.9/55% | 1.4            |
| Loss of trust                                                              | 1.0   | 6.0   | 4.2     | 1.4            |
| Want to have nothing in common                                              | 1.0   | 5.0   | 4.1     | 1.4            |
| Average Trust/attachment                                                   | 1.0   | 5.5   | 4.2/60% | 1.4            |
| Less travel                                                                | 1.0   | 5.0   | 3.2     | 1.8            |
| Loss of social activities                                                  | 1.0   | 6.0   | 3.2     | 1.7            |
| Average Coop./Socialization                                                | 1.0   | 5.5   | 3.2/46% | 1.75           |
| Wants to end relationship (rationalization for ending)                     | 1.0   | 5.0   | 4.2     | 1.4            |
| Never again (future expectation)                                           | 1.0   | 3.5   | 4.2     | 1.3            |
| Financial loss (cognitive evaluation)                                      | 1.0   | 5.0   | 4.5     | 1.1            |
| Average Equi./Rationalization                                              | 1.0   | 5.0   | 4.3/61% | 1.3            |
| Health problems                                                            | 1.0   | 5.0   | 3/43%   | 1.7            |

Appendix 4.
A neurobiological support for the model (CMFP)

As mentioned, we feel it is important to ground marketing models into actual neurobiological facts as much as possible. One reason for this is that the direction of arrows from one construct to the other is often difficult to establish. In neuroscience, however, efferent and afferent neurons can be determined. As it turns out, the above model is supported by neurobiological evidence: afferent and efferent connections to and from the hypothalamus (the neurobiological center of predation – Weinshenker and Siegel, 2002) confirm its mechanism. Additionally, since there are no efferent connections from the pituitary gland to the hypothalamus (which lateral nucleus is the actual centre of predation – Cheu and Siegel, 1998), there cannot be an arrow going from trust to perceived predation. Neurobiology points to a loop going from evaluation of homeostasis¹² (atmosphere) to the hypothalamus (perceived

¹¹ Mesly (2012c).
¹² The tegmentum feeds information on homeostasis to the hypothalamus.
predation). The following table (Appendix 4) examines some of the efferent and afferent connections related to the hypothalamus:

### Efferent from and Afferent to the hypothalamus (simplified version)\(^{13, 14}\)

<table>
<thead>
<tr>
<th>Efferent</th>
<th>To brain structure</th>
<th>Efferent neuron connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PREDATION</strong></td>
<td>Pituitary gland</td>
<td>Efferent connection known as the HPA axis (with “A” for adrenalin)(^*)</td>
</tr>
<tr>
<td></td>
<td>Amygdala(^*) (connects with thalamus and hippocampus)</td>
<td>Emotion/Attachment</td>
</tr>
<tr>
<td></td>
<td>Thalamus (connects with pre-frontal cortex)</td>
<td>Socialization</td>
</tr>
<tr>
<td></td>
<td>Prefrontal cortex (via thalamus; acts on homeostasis)</td>
<td>Rationalization</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>From brain structure</th>
<th>To hypothalamus</th>
<th>Afferent neuron connections</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PREDATION</strong></td>
<td>Pituitary gland</td>
<td>No afferent(^+)</td>
</tr>
<tr>
<td></td>
<td>Amygdala(^*)</td>
<td>Emotion/Attachment</td>
</tr>
<tr>
<td></td>
<td>Thalamus</td>
<td>Socialization</td>
</tr>
<tr>
<td></td>
<td>Prefrontal cortex</td>
<td>Rationalization</td>
</tr>
<tr>
<td></td>
<td><strong>ATMOSPHERE/</strong></td>
<td>Tegmentum(^+)</td>
</tr>
</tbody>
</table>

\(^*\) Considered part of the limbic structure in traditional neuroscience. \(^+\) Fully supports the consolidated model of financial predation.

Observation: neurobiological evidence fully supports the SEM model.

---

\(^{13}\) See Mesly (2012c, 2013).

\(^{14}\) Neurobiological terms: efferent: neurons depart from the hypothalamus towards another brain structure; afferent: neurons’ terminal buttons are received by the hypothalamus from other brain structure.
## Appendix 5.
The consolidated model of financial predation (CMFP with key brain components)

![Diagram of the consolidated model of financial predation](image)

- Dependence
- Thalamus/Somatotopereception
- HPA/HPG
- Amygdala
- Oxytocin
- Pre-frontal cortex (PFC)/Hippocampus
- Cerebellum
- M1
- Broca area
- Serotonin
- Dopamine
- Orexin
- VTA (ventral tegmental area)

△ = Critical path (marketing perspective)

↑ = Neuronal and hormonal flow (additional neurobiological perspective)

## Appendix 6.
Database consisting of multiple studies involving 1,160 participants done between 2007 and 2012

- Information about the samples

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of participants</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>28</td>
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<tr>
<td>5</td>
<td>26</td>
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<td>48</td>
</tr>
<tr>
<td>28</td>
<td>46</td>
</tr>
<tr>
<td>Total</td>
<td>1160</td>
</tr>
</tbody>
</table>

- Relationships among variables: see Figure 1
- Sampling procedure:
  1) Type: quantitative;
  2) Selection method: Purposive sampling;
  3) Method of contact: in person;
4) No sponsorship;
5) No incentives provided to participants;
6) Number in the sampling frame: see above;
7) Response rate: 100%.

- Industries from which the sample was drawn: various: car dealerships, banking, financing, schools, music groups (orchestras, choirs), and real estate.
- Company characteristics: geographic scope: French and English Canada, France
- Major activities/job responsibilities represented: n/a.
- Respondent characteristics including:
  A) Age (in %): 1) 18-30= 34%; 31-45= 19%; 46-60= 15%; 61 and more= 10%; did not answer: 22%;
  B) Gender female 54 %; male: 42%; did not answer: 4%;
  C) Length of service: n/a;
  D) Experience level: n/a.
- Statistics: means; standard deviations; inter-correlations; reliability/validity indices (see Table 1).

<table>
<thead>
<tr>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>Valid</td>
</tr>
<tr>
<td>Missing</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Std. Deviation</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
</tbody>
</table>

* Likert scale 1-7. 7 = fully agree.
Table of correlations:

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Predator</th>
<th>Prey</th>
<th>Trust in %</th>
<th>Equilibrium in %</th>
<th>Cooperation in %</th>
<th>Atmosphere in %</th>
<th>Dependence in %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation Bilateral sig.</td>
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<td></td>
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<td>0.311**</td>
<td>0.288**</td>
<td>0.218**</td>
<td>0.373**</td>
<td>0.123**</td>
</tr>
<tr>
<td></td>
<td>1160</td>
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<td>0.000</td>
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<td>0.000</td>
<td>0.004</td>
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<td>Prey</td>
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<td>-0.016</td>
<td>-0.048</td>
<td>-0.018</td>
<td>-0.087**</td>
<td>0.124*</td>
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</tr>
<tr>
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<td>0.160</td>
<td>0.160</td>
<td>0.160</td>
<td>0.160</td>
</tr>
<tr>
<td>Trust in %</td>
<td>0.288**</td>
<td>0.000</td>
<td>0.016</td>
<td>0.018</td>
<td>0.083**</td>
<td>0.643**</td>
<td>0.069</td>
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<td>0.584</td>
<td>0.101</td>
<td>0.533</td>
<td>0.045</td>
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</tr>
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<td>0.160</td>
<td>0.160</td>
<td>0.160</td>
<td>0.160</td>
<td>0.160</td>
</tr>
<tr>
<td>Equilibrium</td>
<td>0.218**</td>
<td>0.000</td>
<td>0.764**</td>
<td>0.738**</td>
<td>0.593**</td>
<td>0.069</td>
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<td>in %</td>
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<td>0.101</td>
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<td>0.160</td>
<td>0.160</td>
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</tr>
<tr>
<td>Cooperation</td>
<td>0.373**</td>
<td>0.000</td>
<td>0.863**</td>
<td>0.738**</td>
<td>0.168**</td>
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<td>in %</td>
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<td>0.593**</td>
<td>0.000</td>
<td>1.000</td>
<td>1.000</td>
</tr>
<tr>
<td>in %</td>
<td>0.004</td>
<td></td>
<td>0.045</td>
<td>0.045</td>
<td>0.045</td>
<td>0.045</td>
<td>0.045</td>
</tr>
<tr>
<td></td>
<td>532</td>
<td></td>
<td>0.532</td>
<td>0.532</td>
<td>0.532</td>
<td>0.532</td>
<td>0.532</td>
</tr>
<tr>
<td>Dependence</td>
<td>0.077</td>
<td>0.186</td>
<td>0.124*</td>
<td>0.031</td>
<td>0.016</td>
<td>0.016</td>
<td>0.016</td>
</tr>
<tr>
<td>in %</td>
<td>0.186</td>
<td></td>
<td>0.032</td>
<td>0.032</td>
<td>0.032</td>
<td>0.032</td>
<td>0.032</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td></td>
<td>0.300</td>
<td>0.300</td>
<td>0.300</td>
<td>0.300</td>
<td>0.300</td>
</tr>
</tbody>
</table>

Equilibrium (win-win) in %; Dependence (only 300 were found filled in).

*Impossible calculation because at least one variable is constant; **significant at p=0.01; * at p=0.05.

- Scale items drawn from previously published literature: Mesly, 2010; Hare 2003.

### Appendix 7. PLS on n = 348

- Information about the sample:

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>348</td>
</tr>
</tbody>
</table>

- Relationships among variables: see below.
- Sampling procedure:
  1) Type: quantitative;
  2) Selection method: Purposive sampling;
  3) Method of contact: in person;
  4) No sponsorship;
  5) No incentives provided to participants;
6) number in the sampling frame: see above;  
7) response rate: 100%.

- Industries from which the sample was drawn: various: local community center.
- Company characteristics: geographic scope: English Canada.
- Major activities/job responsibilities represented: n/a.
- Respondent characteristics including:
  A) Age (in %): 1) 18-30= 22%; 31-45= 31%; 46-60= 14%; 61 and more= 4%; did not answer: 9%;
  B) Gender female 51%; male: 49%; did not answer: 0%;
  C) Length of service: n/a;
  D) Experience level: n/a.
- Statistics: means; standard deviations; inter-correlations; reliability/validity indices.

<table>
<thead>
<tr>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>Valid</td>
</tr>
<tr>
<td>Missing</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Std. Deviation</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
</tbody>
</table>

* Likert scale 1-7, 7 = fully agree.
Table of correlations:

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Predator</th>
<th>Prey</th>
<th>Trust in %</th>
<th>Equilibrium in %</th>
<th>Cooperation in %</th>
<th>Atmosphere in %</th>
<th>Dependence in %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pearson Correlation</strong></td>
<td><strong>Bilateral sig.</strong></td>
<td><strong>.393</strong></td>
<td><strong>.186</strong></td>
<td><strong>.195</strong></td>
<td><strong>.281</strong></td>
<td><strong>.163</strong></td>
<td><strong>.110</strong></td>
</tr>
<tr>
<td>Predator</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.041 48</td>
<td>.348</td>
</tr>
<tr>
<td>Prey</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.015 348</td>
<td>.014 348</td>
<td>.301 48</td>
<td>.058</td>
</tr>
<tr>
<td>Trust in %</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.248 48</td>
<td>.348</td>
</tr>
<tr>
<td>Equilibrium in %</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.060 48</td>
<td>.348</td>
</tr>
<tr>
<td>Cooperation in %</td>
<td>.000 348</td>
<td>.015 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.435 48</td>
<td>.348</td>
</tr>
<tr>
<td>Atmosphere in %</td>
<td>.000 348</td>
<td>.014 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 48</td>
<td>.348</td>
</tr>
<tr>
<td>Dependence in %</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 348</td>
<td>.000 48</td>
<td>.348</td>
</tr>
</tbody>
</table>

*Equilibrium (win-win) in %; ** significant at p=0.01; * at p=0.05.*

Cronbach alpha for Predator; Prey; Trust; Equilibrium (win-win); Cooperation (>0.70):

<table>
<thead>
<tr>
<th>Summary</th>
<th>Reliability statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td>348</td>
</tr>
<tr>
<td>Excluded</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>348</td>
</tr>
</tbody>
</table>

• Scale items drawn from previously published literature: Mesly 2010, Hare 2003.
Appendix 8.
A study on a case involving 1500 people who were duped by a financial scheme

- Information about the sample:
  “To test whether the Mesly model of financial predation\(^1\) makes sense beyond the neurobiological evidence, we decided to run an exploratory analysis. We retrieved the names of clients who had been defrauded in one of the major fraud such case in Eastern Canada and who had filed a class action against the firm that emptied their pockets through financial dealings turned sour. Equipped with this list of some 1500 names, we traced them through Internet search engines to verify that the addresses indicated on the class action document were still valid – the class action had been entered in 2006 and was still under court proceedings. We then sent the Mesly questionnaire (Mesly, 2010) to the participants we could reach, some 900 of them. The questionnaire had been amended to include self-reporting questions about the effects on their being a victim of fraud on their health and social life in particular. Of the 900 letters that were sent out, only a mere 26 came back. Of those, only 3 were from people who had loss less than C$ 100,000, the rest having lost more than that amount. This alone seemed to suggest that the victims did not bother replying if they deemed it unnecessary given the amount of money they lost. Nevertheless, follow-up phone calls were made for the people who had not returned the questionnaires. In a few cases, the address was erroneous and the people could no longer be traced. Finally, others just didn’t want to “bother”. This study took place between February and April 2012 and we decided not to insist to get filled-out questionnaire from people who had not responded yet by the end of April. The response rate was therefore of 3%, which is rather low.” (Mesly, 2012c, p. 44-45).

- Relationships among variables: see below.
- Sampling procedure:
  1) Type: quantitative;
  2) Selection method: Purposive sampling;
  3) Method of contact: by mail;
  4) Sponsorship: UQO FIR;
  5) No incentives provided to participants;
  6) Number in the sampling frame: see above;
  7) Response rate: see above.

\(^1\) Also called the CMFP.
• Industries from which the sample was drawn: various: Court case- Class action.
• Company characteristics: geographic scope: Québec, Canada.
• Major activities/job responsibilities represented: n/a.
• Respondent characteristics including:
  A) Age: 1) 18-30= 3; 31-45= 6; 46-60= 9; 61 and more= 8; did not answer: 0;
  B) Gender female:15; male: 8; did not answer: 3;
  C) Length of service :n/a;
  D) Experience level :n/a.
• Statistics: means; standard deviations; inter-correlations; reliability/validity indices (exploratory analyses).

<table>
<thead>
<tr>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Valid</td>
</tr>
<tr>
<td>Missing</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Std. Deviation</td>
</tr>
<tr>
<td>Minimum</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
</tbody>
</table>

* Likert scale 1-7. 7 = fully agree.
Table of correlations:

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Predator</th>
<th>Prey</th>
<th>Trust in %</th>
<th>Equilibrium in %</th>
<th>Cooperation in %</th>
<th>Atmosphere in %</th>
<th>Dependence in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>Bilateral sig.</td>
<td>1</td>
<td>.786**</td>
<td>.073</td>
<td>.250</td>
<td>.126</td>
<td>.483*</td>
</tr>
<tr>
<td>Predator</td>
<td>.000</td>
<td>.724</td>
<td>.219</td>
<td>.541</td>
<td>.012</td>
<td>.541</td>
<td>.126</td>
</tr>
<tr>
<td>Prey</td>
<td>.000</td>
<td>1</td>
<td>-.544**</td>
<td>.113</td>
<td>-.023</td>
<td>.268</td>
<td>-.023</td>
</tr>
<tr>
<td>Trust in %</td>
<td>.073</td>
<td>-.544**</td>
<td>1</td>
<td>.150</td>
<td>.217</td>
<td>.146</td>
<td>.217</td>
</tr>
<tr>
<td>Equilibrium in %</td>
<td>.724</td>
<td>.004</td>
<td>.466</td>
<td>.266</td>
<td>.478</td>
<td>.266</td>
<td>.266</td>
</tr>
<tr>
<td>Cooperation in %</td>
<td>.250</td>
<td>.581</td>
<td>1</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Atmosphere in %</td>
<td>.219</td>
<td>.466</td>
<td>.581</td>
<td>.266</td>
<td>.266</td>
<td>.266</td>
<td>.266</td>
</tr>
<tr>
<td>Dependence in %</td>
<td>.250</td>
<td>.113</td>
<td>.150</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

(Caution: small sample; dependence not measured)
Equilibrium (win-win) in %; **significant at p=0.01; *at p=0.05.

- Scale items drawn from previously published literature: Mesly 2010; Hare, 2003.