

REACTANCE THEORY: A BIBLIOMETRIC REVIEW

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ABSTRACT

Reactance theory was proposed almost 50 years ago as a ramification of the cognitive dissonance theory. Reactance would emerge once any given freedom is threatened (J. W. Brehm, 1966), as a motivational state in order to protect one's capacity to choose whatever they want. Psychological reactance related directly to the sour grapes effect, in which the objects that become unobtainable are then derogated by individuals (Lesse & Venkatesan, 1977). Although a few reviews about Reactance Theory have been done in these almost 50 years since it was proposed, none to our knowledge have applied a proper bibliometric technique to map the knowledge to date about the theory. We have designed a bibliometric study and identified that the reactance theory spreads over different areas of knowledge, as psychology, consumer behavior and health studies, with a whole stream of reactance research within the latter, on what regards the understanding of patient compliance towards recommended treatments or even how is the public reaction towards campaigns to reduce smoking or alcohol consumption. Our search for the articles that were part of this research was made on the Web of Knowledge repository, using the following expressions: "psychological reactance", "reactance theory", "psychological freedom" and "reatância psicológica". The last one is the translation of psychological reactance in Portuguese, but we have not found any worth-including articles, except for one, which was considered in the analysis. The search resulted in a bulk of 382 articles, which summed over 5,500 citations in nearly 50 years – since Brehm's work that proposed the theory (J. W. Brehm, 1966). Our objective with this study was to categorize reactance theory research and understand whether its approach from the consumer behavior standpoint represents a relevant path for further research. Our bibliometric approach involved analyzing co-citations and running a factor analysis in order to understand how the articles are grouped in factors that determined the organization of the knowledge. We also presented a word cloud about the subject to identify the main trends. As a result, we understood the importance of the theory for each field of knowledge, confirmed that there were important consequences for grasping consumer behavior, specially related with emotions and communication framing, although we did expect stronger representation of those subjects in the factors and suggested future areas to be investigated within consumer studies. However, it is important not to lose sight of the the difficulty on verifying the reactance manipulation in a context in which the consumer has his freedom of choice threatened, making any reactance studies more challenging.

Keywords: Psychological Reactance, Psychological Freedom, Consumer Reactance.

1 Introduction

In our daily life, we face many decisions and choices. Some decisions are more important than others, but the fact is we have a lot of interference in every decision we have to make. Psychologists have identified several of them by observing how we make our decisions, what we take into consideration when we decide about something, which factors get in the way, be them internal or external, among other things. To refer to a few well-known examples, we could mention Festinger's cognitive dissonance theory (1962) which allowed us to understand why sometimes we rationalize about arguments to our behaviors in unexpected ways; and Friestad and Wright's Persuasion Knowledge Model (1994), to demonstrate how people cope with persuasion attempts.

In the same track of Festinger's theory, there was a growing body of knowledge about how we react to specific attempts to hinder our freedom to choose (J. W. Brehm, 1966; J. W. Brehm, Stires, Sensenig, & Shaban, 1966; Hammock & Brehm, 1966; Wicklund & Brehm, 1968). It was the birth of the Reactance Theory, which had immediate and direct implications to understanding how consumers would react once they could not choose a specific option (Clee & Wicklund, 1980).

Although a few reviews about Reactance Theory have been done in these almost 50 years since it was proposed (see Miron & Brehm, 2006 for an example), none to our knowledge have applied a proper bibliometric technique to map the knowledge to date about the theory. We have collected 382 articles from the Web of Knowledge using keywords related to the theory (psychological reactance, psychological freedom) and performed analysis of citation frequencies, word cloud and a factor analysis to better grasp how the subject compartmentalize itself in different areas. Thus, our objective with this study was to categorize Reactance Theory research and understand whether its approach from the consumer behavior standpoint represents a relevant path for further research.

The results show the theory to be quite spread, especially between Psychology and Consumer areas. Moreover, there is a whole stream of reactance research within health sciences, on what regards the understanding of patient compliance towards recommended treatments or how is the public reaction towards campaigns to reduce smoking or alcohol consumption. As the Factor Analysis has shown, reactance is an important theory to explain a lot about consumer behavior, hence it should not be overlooked by scientists of our field. The advent of technology-based self-services is only one demonstration of how consumer's

freedom to choose could be gradually becoming more restrained due to new forms of companies' go-to-market (Reinders, Dabholkar, & Frambach, 2008) or even loyalty programs mechanics (Wendlandt & Schrader, 2007).

This paper is organized as following. The next section covers different aspects about the theory, and on the next section, we explain our method. On the forth part of the article, we present the result from the citation analysis, factor analysis and word cloud. Finally, we conclude by comparing our findings to the theory and recommending future studies.

2 Literature Review

In the 1960's, psychologists started studying a phenomena that was related to a lot of the social influence studies at the time: what would be people's reactions once someone or something tried to lure them into a specific behavior or decision. That was the seed of the psychological reactance theory, whose birth is attributed to Jack Brehm in its book "A Theory of Psychological Reactance" (1966), as stated in most of the articles related to the subject, including a few reviews (see Miron & Brehm, 2006, for an example). Reactance would emerge once any given freedom is threatened (J. W. Brehm, 1966), as a motivational state in order to protect one's capacity to choose whatever they want. Hence, reactance manifests in the form of one choosing a different alternative (i.e. product, decision, specific choice) than what would be initially their choice, as in "engaging the threatened free behavior" (Clee & Wicklund, 1980, p. 390). The most important determinants of the magnitude of reactance would be both related to the threatened freedom: its importance to the individual and the proportion of it that has been threatened or limited (Miron & Brehm, 2006).

At the early stage of the Reactance Theory proposition, the focus was put onto the eliminated alternative as a loss of freedom (J. W. Brehm et al., 1966; Hammock & Brehm, 1966). Those studies were concerned on understanding why people would be inclined to choose or feel more attracted towards an eliminated alternative (J. W. Brehm et al., 1966), whether it was an outsider eliminating that choice or a contextual freedom threat (Hammock & Brehm, 1966). On Brehm et al.'s experiment (1966), most likely one of the first of that kind of investigation for that theory, researchers would ask experiment participants to rank four music albums on a first round, promising they would be allowed to choose one of the albums as a gift in a second round of the study. When that next round happened, on a different day, the participants would learn their third choice was not available. Important to say, it was always the third choice previously chosen by the participant – that was the manipulation. As a

result, the average evaluation of that very album raised. However, that and other experiments that dealt with reactance, whether direct attempting to measure it or not, had their results contested several times, due to their marginal significance. As stated by Rodrigues: “The debility of the experimental evidence found in support of Brehm’s theory may be due to the fact that the phenomena is very hard to be experimentally measured” (Rodrigues, 1969, p. 29).

One of the consequences of eliminating an alternative is what researchers have named sour grapes effect. As Lessne and Venkatesan have stated, “objects which become unobtainable will be derogated by individuals” (G. Lessne & Venkatesan, 1989, p. 77). Psychological reactance related directly to that effect. But more than impacting the choice of alternatives, reactance theory has also a strong social component, based on social influence theories (Grabitz-Gniech, 1971). During the 1970’s a few studies have looked into that perspective. Goodstadt (1971) has investigated how people reacted when facing the need to help a stranger once they no longer could choose to help an acquaintance. A couple of studies have also tested the instances in which a kind of prediction about one’s behavior is offered – thus restricting, in a way, one’s freedom. Hannah et al. (1975) have studied the effects of movies ratings or voting polls on people’s choices, by observing participants’ reactions towards a specific designs based on different accuracy levels of an personality inventory, presumably created to offer 58%, 68% or 78% prediction rate. The higher the rate, the stronger the reactance – although, again, within marginal significance. Another study focused on finding out the limits of reactance emergence based on the possibility of suffering retaliations by signing a petition. Any attempt of influence would be responded based on reactance (i.e. signing the petition, when that was the threatened freedom), but once any retaliation arose, reactance would vanish (Heilman & Toffler, 1976).

But reactance theory dwells not only under the social influence field. Some investigation has also dealt with the personality or more individual aspects of why some occasions lead to reactance. Personality traces were also investigated by Grabitz-Gniech (1971), showing that individuals with a low level of adequacy (i.e. more confident) would demonstrate stronger reactance to any threat to their freedom, whilst those less confident “showed no psychological reactance” (Grabitz-Gniech, 1971, p. 194). Jones (1970) also demonstrated a different aspect of individual characteristics would impact on how intense reactance would arise and Wicklund and Brehm (1968) showed that even competence relates to reactance. That diverse approach resulted in multiple fields being covered by the theory.

Reactance has been studied under persuasion studies of different sort, such as on patient compliance of medical recommendations (Fogarty, 1997; Fogarty & Youngs, 2000), teacher-student relationship (Zhang & Sapp, 2013), organ-donation campaigns (Quick, Kam, Morgan, Montero Liberona, & Smith, 2015) or even the role of empathy on persuasion attempts (Shen, 2010). Also, reactance has been studied under different cultural perspectives (Jonas et al., 2009) or depending on the social relationship (Heilman & Toffler, 1976).

By approaching reactance theory either from the perspective of social influences or from personality traces would make disputable whether it is a theory connected to a personal state or an individual characteristic. The bulk of theory concerned with measuring reactance has attributed it as an individually-measured aspect (Thomas, Donnell, & Buboltz, 2001), but there is even more interesting perspective on that front, suggesting that not the individual state but the phenomena in which it occurs that should be investigated (G. Lessne & Venkatesan, 1989).

When it comes to individual states, it seemed that a natural route for the reactance theory would be understanding emotional consequences and relations with individual reactance. Perhaps, due to the negative environment that involves the phenomena of restringing a freedom, studies on that front are usually related to negative emotions. As an example, an investigation on reactance for prolonged periods would lead to individuals feeling helplessness (Mikulincer, 1988). That finding led to an important change in the theory (Miron & Brehm, 2006). What Mikulincer had proved was that when individuals see themselves in a situation where freedom was not threatened, but actually eliminated, individuals' reactance would disappear. In a different perspective, when people are faced with a two-choice situation and one offers the suggestion to choose option A, there are two possible outcomes. The first one is to comply with the suggestion, what would lead to an anticipated regret; or reactance prevails and people would choose option B. Research has shown that complying lead to a more satisfactory decision, as one is no longer hold responsible for the consequences of the decision. However, those who comply felt stronger regret, but when instigated to think about how they would feel, reactance was the behavior generating more regret (Crawford, McConnell, Lewis, & Sherman, 2002).

The evolution of the theory also involves the process that involves the rise of the disagreement. Why do we simply react and disagree when our freedom is reduced? What explains what happens is the boomerang effect (Wright, 1986). However, how that happens is a different subject. An attempt was successfully made by Silvia (2006), that demonstrated

there are two options: disagreeing is either a result of an attitude change or the consequence of any of a choice of negative responses, such as counter arguing, suspecting of the information source and others. The relation of reactance with counterargument and anger was also established on a models that defines reactance as a second-order variable of those behaviors (Rains, 2013).

Consumer Reactance

One of the first studies we found about reactance theory related to consumer behavior was run by Mazis et al. (1973). The researchers investigated a major regulatory change on the formulation of a product under the perspective of population reactance. A specific component of laundry detergent – phosphate – was forbidden in Miami. Thus, the population was divided into three different categories: non-switchers, switchers and violators. The first group kept purchasing their favorite brand, the second was forced to switch (due to unavailability of their favorite product with the correct formulation) and the third group deliberately broke the law. As a side note, the enforcement affected the consumers, not the companies. Hence, Mazis et al.'s hypothesis inferred that Miami consumers' attitudes towards phosphate laundry detergents' would be more positive, whilst attitudes would be more negative towards Miami's pollution measures. The measures were taken versus a control city – Tampa. Both hypothesis were confirmed (Mazis et al., 1973). It was a first attempt at applying reactance theory to consumer behavior.

The theory kept advancing towards more practical cases of how it would affect consumer studies. Threats to freedom were presented within persuasion attempts contexts with the specific objective of consumption. For instance, the work of Clee and Wicklund (1980) covered how freedom threats could have a mediator role to reactance to emerge, depending on how it would manifest. Its presence or absence would lead to reactance, as long as there was an expectation that a choice was possible. In addition, the importance of that freedom would also influence the magnitude of reactance. The authors propose importance to stem from three types of sources: its relevance to satisfy consumer's needs, how competent one would be to make the choice and if there was a cognitive overlap within the choice, reducing the importance of one to be free to choose (Clee & Wicklund, 1980). That work was also important because it brought to the discussion aspects related to the impersonal threats of freedom suggested by Hammock and Brehm (1966): the outcome that product unavailability and pricing would have on reactance. On the former, Clee and Wicklund suggest it is the operationalization of the unavailable choice overrating – as in the detergent (Mazis et al.,

1973) and album (J. W. Brehm et al., 1966) examples –, this time due to a contextual issue. For the latter, the authors infer that “it is also possible that attraction increases when the price increases because of reactance” (Clee & Wicklund, 1980, p. 394). The power of price and product availability was later reinforced by Lessne and Venkatesan (1989), who made a short summary of previous findings involving product stocks and pricing.

The continuity of the reactance theory within consumer behavior involved investigating aspects from consumption that would reduce consumer freedom. That would be valid for the common retail offers that limit the amount of product that could be purchased. When looked through reactance theory googles and operationalized in an experiment, researchers found that the lower the amount of product, the higher the reactance generated (G. J. Lessne & Notarantonio, 1988). As personal recommendation (i.e. word of mouth) is of the most influential communication forms (Keller, 2007; Keller & Fay, 2012; Kimmel & Kitchen, 2014), researchers have also dug into aspects of that kind of communication that could trigger reactance on consumers. The fact that the person recommending an option is an expert would derive higher reactance than a non-expert, which would generate almost no reactance, as their opinion is not seen as freedom threatening (Fitzsimons & Lehmann, 2004).

The way businesses are assembled also create the conditions to boost reactance. A study allowed understanding how the mere restricting mechanics of loyalty programs would lead to consumers’ reactance, manifested on negative word of mouth, lower purchase and repurchase intentions (Wendlandt & Schrader, 2007). The same holds for online recommendations (Kwon & Chung, 2010). If programs guidelines have that effect, one could only imagine what the whole business model arranged in a freedom threatening way would do. That is the case for technology-based self-service, an approach that has being increasingly employed, especially by service providers. That approach naturally brings consequences to service users, such as freedom threatening and, ultimately, high levels of reactance (Reinders et al., 2008). Previous works on resistance to persuasion already elaborated on how people would cope with persuasion attempts, regardless of any motivational state (Friestad & Wright, 1994). Thus, there is room to understand how different communication messages could be worked to reduce reactance to persuasion (Quick et al., 2015).

3 Method

Bibliometrics

The bibliometrics term as began to be used as statistical bibliography in the 1920's. The term refers to the quantitative statement of clarification explanations of scientific and technological processes. That definition confirms its origins in math and not bibliography, as the latter is more of a discursive area (Pritchard, 1969). Thus, statistical calculations are often used to achieve specific results on the amount of information on a subject, such as how many authors discuss a specific subject in a given period (Oluić-Vuković, 1997)

Despite its mathematical origin, we should not simplify the bibliometrics technique only as a count of numbers related to a theme. One way to understand the statistical strength of bibliometrics study is through the analysis of three laws: Lotka, Bradford e Zipf (Quoniam et al., 1998) . These laws are responsible for checking the bibliometrics' results, extracting what is most relevant in a subject (Oluić-Vuković, 1997). The union of these laws may provide us with information used for decision-making in the management of information and knowledge, as its outcome seeks to organize and systematize scientific and technological information (Pao, 1985).

Sample and procedures of analysis

Our search for the articles that were part of this research was made on the Web of Knowledge repository, using the following expressions: “psychological reactance”, “reactance theory”, “psychological freedom” and “reatância psicológica”. The last one is the translation of psychological reactance in Portuguese, but we have not found any worth-including articles, except for one, which was considered in the analysis. The search resulted in a bulk of 382 articles, which summed over 5,500 citations in nearly 50 years – since Brehm's work that proposed the theory (J. W. Brehm, 1966). Based on Lotka's law, we have selected the articles that accounted for 5% of the citations, what resulted in 45 articles and with those we assembled co-citation matrix for the subject using the software Bibexcel. Next, we input the matrix into statistical analysis software SPSS, version 20, and ran an Exploratory Factorial Analysis (EFA) in order to understand whether the co-citation establish a number of factor with common characteristics amongst them, based on their internal correlation. Thus, each represents a sort of a summary of the articles that are part of it (Hair Jr, Black, Babin, & Anderson, 2009). As we are attempting to map a field, the factors may represent a

convergence of the authors to a specific theme or issue. We read and analyzed the articles aligned to each of the factors with the objective to allow us to nominate them.

4 Results

In this section, we present the results for the three analysis proposed in this article: citation analysis, word cloud and factor analysis.

Citation analysis

As shown on Figures 1 and 2, both publications and citations are consistently growing in the last twenty years. The trend for both quantities is that 2015 becomes the year with the largest amount of publications, an indication of how heated is the discussion about reactance theory.

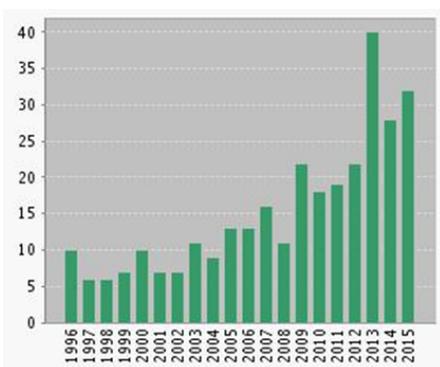


Figure 1-Published Items Each Year. Source: Web of Knowledge

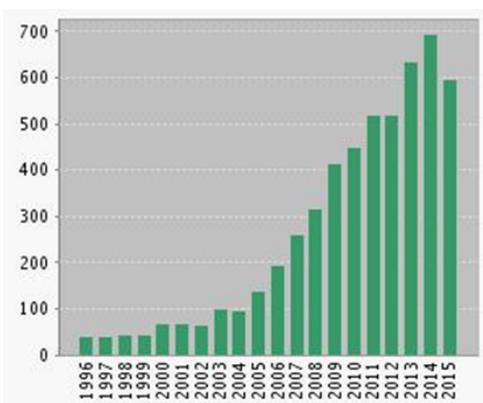


Figure 2-Citations Each Year. Source: Web of Knowledge

When we analyze the main articles in terms of citations (table 2), we are able to understand a few patterns of this field of knowledge. First, we have noticed there is not a major area of knowledge where reactance prevails. Research is balanced between

communication, advertising, consumer studies and psychology-related studies. Second, differently from many theories, the seminal articles are not on the top of the ranking. A partial exception is Clee and Wicklund’s work from 1980, ranked as 5th most cited article on the subject, which could be attributed as one of the first papers that connected reactance theory with consumer studies. Finally, despite the high number of citations for the top two articles, the subject does not seem too much concentrated in few articles, as the top 20 rank represents less than 40% of the total amount of citations.

Title	Authors	Source Title	Pub. Year	Total Cit.	Avg p/ Year	SCR ⁱ
The social influence of brand community: Evidence from European car clubs	Algesheimer, R; Dholakia, UM; Herrmann, A	Journal of marketing	2005	291	26.45	7.284
Fear Control And Danger Control - A Test Of The Extended Parallel Process Model (Eppm)	WITTE, K	Communication Monographs	1994	275	12.5	N/A
You can't always get what you want: Educational attainment, agency, and choice	Snibbe, AC; Markus, HR	Journal of Personality and Social Psychology	2005	158	14.36	N/A
On the nature of reactance and its role in persuasive health communication	Dillard, JP; Shen, LJ	Communication Monographs	2005	138	12.55	N/A
Consumer-Behavior and Psychological Reactance	CLEE, MA; WICKLUND, RA	Journal of Consumer Research	1980	129	3.58	6.057
Forced exposure and psychological reactance: Antecedents and consequences of the perceived intrusiveness of pop-up ads	Edwards, SM; Li, HR; Lee, JH	Journal of Advertising	2002	116	8.29	1.415
Expanding and evaluating	De Young, R	Journal of Social	2000	111	6.94	N/A

motives for environmentally responsible behavior		Issues				
Reactance to recommendations: When unsolicited advice yields contrary responses	Fitzsimons, GJ; Lehmann, DR	Marketing Science	2004	108	9	6.248
Refinement of the Hong Psychological Reactance Scale	Hong, SM; Faedda, S	Educational and Psychological Measurement	1996	95	4.75	N/A
Moderating effects of need for cognition on responses to positively versus negatively framed advertising messages	Zhang, Y; Buda, R	Journal of Advertising	1999	91	5.35	1.415
The Therapeutic Reactance Scale - A Measure Of Psychological Reactance	DOWD, ET; MILNE, CR; WISE, SL	Journal of Counseling And Development	1991	88	3.52	N/A
Adolescent reactance and anti-smoking campaigns: A theoretical approach	Grandpre, J; Alvaro, EM; Burgoon, M; Miller, CH; Hall, JR	Health Communication	2003	86	6.62	N/A
Narcissism, sexual refusal, and aggression: Testing a narcissistic reactance model of sexual coercion	Bushman, BJ; Bonacci, AM; van Dijk, M; Baumeister, RF	Journal of Personality And Social Psychology	2003	81	6.23	N/A
Psychological resistance against attempts to reduce private car use	Tertoolen, G; Van Kreveland, D; Verstraten, B	Transportation Research Part A- Policy and Practice	1998	80	4.44	N/A
Dependence of phonation threshold pressure on vocal tract acoustics and vocal fold tissue mechanics	Chan, RW; Titze, IR	Journal of the Acoustical Society of America	2006	71	7.1	N/A

Explaining the Effects of Narrative in an Entertainment Television Program: Overcoming Resistance to Persuasion	Moyer-Guse, Emily; Nabi, Robin L.	Human Communication Research	2010	66	11	N/A
Barriers to nature conservation in Germany: A model explaining opposition to protected areas	Stoll-Kleemann, S	Journal of Environmental Psychology	2001	66	4.4	N/A
A Psychological Reactance Scale - Development, Factor Structure And Reliability	HONG, SM; PAGE, S	Psychological Reports	1989	64	2.37	N/A
Forbidden fruit versus tainted fruit: Effects of warning labels on attraction to television violence	Bushman, BJ; Stack, AD	Journal of Experimental Psychology- Applied	1996	63	3.15	N/A
Reactance theory and patient noncompliance	Fogarty, JS	Social Science & Medicine	1997	60	3.16	N/A

Figure 3–Top 20 articles (total citations). Source: Authors.

Word Cloud

We have used Iramuteq software to generate a word cloud, based on all of the 382 articles abstracts. As it can be seen on Figure 3, reactance is actually the central word of the cloud, and it has the largest size as well, what means it is the most present word in all abstracts. Next to it, it is worth to mention a few words that are well interlinked with the theory:

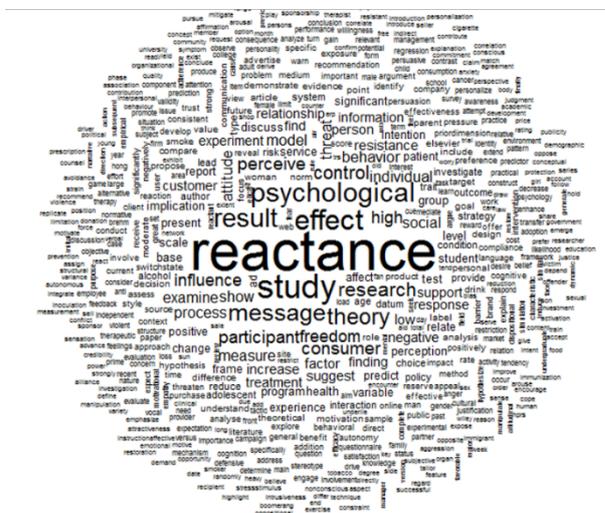


Figure 4 - Word Cloud – Reactance. Source: Authors.

- Freedom: it all started with Brehm and his colleagues investigating how people reacted once any freedom of theirs was hindered. So, “freedom” goes back to the roots of the theory, indeed.
- Consumer: the fact the word is visible and not so far from the center demonstrates the theory is not so far from Consumer Behavior.
- Psychological: it is not only part of the theory’s name, but it is also the field where much of the research is done.
- Effect: that word represents the focus of the theory. It is not only about observing the reaction, but also understanding what it generates on the person that derives that motivational state.
- Control: that is also interesting, as very few of the papers covers control. Our understanding of that word is related to how messages should be under control in terms of not hindering freedoms, so that reactance does not come up.

Factor Analysis

The Factor Analysis followed the procedures to check if the analysis was consistent. The initial KMO was slightly above the 0.5 threshold (KMO = 0.543), and Bartlett’s Test of Sphericity was already significant. However, a few of the variables (i.e. articles) did not have their KMO above the 0.5 limit in the Anti-Image covariance matrix. After sequentially excluding five of those articles, we have reached a more satisfactory KMO of 0.759 and, naturally, kept Bartlett’s Test significant. Next, we have reviewed the factors, guaranteeing that none of them had variables with loadings below 0.5 and we have also checked the reliability of each factor, as each one should have Crombach’s alpha above 0.6. Those proceedings follow the recommendations of Hair et al. (2009).

After conducting the analysis above, 40 of the 45 initial articles remained in the analysis, and they were split onto four factors, as shown on table 2. The four factors explained more than 80% of the total variance, also above the recommended threshold (Hair Jr et al., 2009).

The first factor comprises 18 papers, which account for 50% of the total variance. Most of the articles in this factor are concerned with the application of the reactance theory to health issues as the papers by Dillard & Shen (2005) and Ringold (2002) show. In that subject, there is a clear focus on how the communication messages that are supposed to be educational of a healthier behavior are received by individuals without generating a strong reaction against it (Miller, Lane, Deatrck, Young, & Potts, 2007; Rains & Turner, 2007). Some of the papers in that factor are clearly pointed at a specific concern in terms of health issues. The papers from Grandpre et al. (2003) and Miller et al. (2006) studied the role that reactance theory had in adolescents habits of smoking, while Bensley and Wu’s (1991) work aimed at understanding how alcohol consumption prevention messages could be arousing reactance behaviors. Given the strong focus on health issues, we named this factor “Unhealthy reactance”.

Rotated Component Matrix (Varimax) Citations	Component				h ²
	Factor 1 Unhealthy Reactance	Factor 2 Personality	Factor 3 Consumer Reactance	Factor 4 Pioneer Reactance	
Silvia, 2005	,645				0,789
Ringold, 2002	,688				0,827
Shen & Dillard, 2005	,721				0,774

Eagly & Chaiken, 1993	,739			0,801
Dillard & Shen, 2005	,763			0,681
Brehm & Brehm, 1981	,826			0,816
Hu & Bentler, 1999	,864			0,898
Petty & Cacioppo, 1986	,880			0,845
Grandpre, Alvaro, Burgoon, Miller & Hall, 2003	,889			0,833
Quick & Stephenson, 2007	,897			0,826
Miller, Lane, Deatrck, Young & Potts, 2007	,906			0,854
Bensley & Wu, 1991	,910			0,869
Rains & Turner, 2007	,914			0,856
Witte, 1992	,917			0,867
Miller, Grandpre, Burgoon & Alvaro, 2006	,935			0,891
Burgoon, Alvaro, Grandpre & Voulodakis, 2002	,940			0,886
Reinhart, Marshall, Feeley & Tutzaer, 2007	,945			0,895
Quick & Stephenson, 2008	,952			0,915
Brehm & Brehm, 1981		,569		0,701
Dowd, Wallbrown, Sanders, Yesenosky, 1994		,706		0,720
Dowd, Millne & Wise, 1991		,726		0,729
Hong & Ostini, 1989		,754		0,836
Dowd & Wallbrown, 1993		,763		0,696
Hong & Page, 1989		,830		0,748
Merz, 1983		,898		0,875
Shohamsalomon, Avner & Neeman, 1989		,906		0,834
Horvath & Symonds, 1990		,923		0,855
Rohrbaugh, Tennen, Press & White, 1981		,938		0,890
Graybar, Antonuccio, Boutilier & Varble, 1989		,944		0,920
Hong, Giannakopoulos, Laing & Williams, 1994		,653		0,765
Baron & Kenny, 1986			,736	0,790
Clee & Wicklund, 1980			,761	0,743
Aiken & West, 1991			,778	0,872

Edwards, Li & Lee, 2002			,801		0,726
Fitzsimons & Lehmann, 2004			,866		0,862
Fitzsimons, 2000			,875		0,814
Kivetz , 2005			,912		0,870
Hong & Faedda, 1996			,516		0,727
Hammock & Brehm, 1966				,792	0,742
Festinger, 1962				,690	0,886
Crombach's Alpha	0,967	0,919	0,905	0,836	
% Variance explained - Accumulated	50,9%	70,0%	78,2%	81,7%	

Table 1 - Factor loadings, h², Crombach’s Alpha and % Variance explained. Elaborated by the authors.

Moving onto the second factor, it offers a marginal variance explanation of 20% and it contains 12 articles. This the factor that concentrates the work on reactance in the psychology science (i.e. Brehm & Brehm, 1981), with a few papers that approached the theory from the standpoint of psychological therapy (E. Thomas Dowd & Wallbrown, 1993; Graybar, Antonuccio, Boutilier, & Varble, 1989; Horvath & Symonds, 1991), aiming at understanding possible effects of reactance from the client perspective. The main focus of the factor actually extrapolates the therapeutic field, as it also comprises work from psychologists who attempted to point out the importance and effects that different traces or aspects of personality and individuals (i.e. age and gender) played when generating or relating to reactance (Edmund Thomas Dowd, Wallbrown, Sanders, & Yesenosky, 1994; S.-M. Hong, Giannakopoulos, Laing, & Williams, 1994; Shoham-Salomon, Avner, & Neeman, 1989). In addition, as this is the “Personality” factor, some of the reactance measurement attempts are also part of the factor, including Hong and Page’s Reactance Scale (S. Hong & Page, 1989), Merz’s german version of a reactance scale (Merz, 1983), Hong’s critique of that attempt (S.-M. Hong & Ostini, 1989) and, finally, Dowd’s suggestion of an exclusive therapeutic reactance scale (E. Thomas Dowd, Milne, & Wise, 1991).

The third factor adds 8% to the variance explanation and comprises eight articles, almost all of them from the marketing front. Actually, the two articles not marketing or consumer behavior exclusive, are in fact methodological articles: Baron and Kenny’s famous moderation and mediation guide (Baron & Kenny, 1986) and a book that deals with multiple regression (Aiken & West, 1991). Hong and Faedda’s new test of Hong and Page’s scale (1996) would be clearly better placed at the previous factor. Hence, the remaining five articles present how reactance related with consumer studies. Clee and Wicklund’s (1980) work could

be considered a mark, as it sets the stage to how reactance would be connected with the marketing world and includes a few propositions that could be tested in the future. Edwards et al. (2002) present a study about how pop up ads relate to arousing of reactance, whilst Fitzsimons (2000) investigate the component of reactance on consumer responses to stockouts and its consequence to consumer satisfaction. Other papers involve the understanding of reactance to promotions (Kivetz, 2005) and to unsolicited recommendations (Fitzsimons & Lehmann, 2004). Due to its focus on relating reactance and consumer behavior, we thus named it “Consumer Reactance”.

Finally, the forth factor consists of only two papers. Faced with the decision of keeping this factor or withdrawing it from the analysis – it contributed with roughly 3.5% of the variance explanation –, we decided to keep it for a reason: both articles are quite important to the theory origination. As we have stated on the literature review of the theory, Jack Brehm is considered the main proponent of reactance theory. His academic career started at graduate school at the University of Minnesota, where he worked with Leon Festinger and wrote his dissertation around the cognitive dissonance paradigm. Thus, it is understandable why the reactance theory is so closely related to cognitive dissonance (Rodrigues, 1969). Hence, Festinger’s seminal work (1962) is one of the articles on this forth factor. The second article is Hammock and Brehm’s (1966) work on the appeal of the eliminated choice, published in the same year that Brehm proposed the theory, using much of the studies he did with Hammock on how people reacted when some of their alternatives were no longer available. This is the factor of the “Pioneer Reactance”.

5 Conclusion

This bibliometric review has allowed us to better understand how Reactance Theory spreads over different fields of knowledge. Reactance theory studies have increased significantly in the last decade, what consolidated the spread through different areas. Our research has showed reactance being studied in Psychology, consumer studies, health studies and more.

On the consumer front, however, there were a few subjects that we expected that could have made to the factors. The first one is the role emotions like anger play within reactance (Quick et al., 2015; Rains, 2013). Another one concerns how communication message framing relate to reactance studies (Shen, 2010), as a more incisive message could trigger reactance, leading the receiver of the message to act on the opposite direction. That concern

about communication messages was present in the first factor, but still with a big concern on health issues. Nevertheless, we have confirmed the importance of the consumer studies to the reactance theory.

In order to create a research schedule on reactance theory there is apparently an operational difficulty: the difficulty on verifying the reactance manipulation in a context in which the consumer has his freedom of choice threatened. Unfortunately, the inclusion of a manipulation efficiency control in a quiz (for example: “please indicate the measure in which you felt that your freedom of choice was being threatened by this advertising”) does not seem viable. In other words, it is very hard to determine if individuals are really being influenced by reactance. If that is the case, due to such operational difficulty, it is very hard to determine if reactance is influencing the individual or if other psychological perspective can explain that behavior.

Anyway, any researcher conducting a study using reactance theory must realize that it is practically impossible to determine if reactance is really manifesting itself. Does that mean that the theoretical study of this phenomenon should be abandoned? Probably not. This obstacle however requires a change in the way in which the theory is applied in consumer’s behavior studies.

What we consider important is to continue the understanding of the theory by conducting more studies that concentrate on specific demands. First, studies like the one from Rains (2013), which proposes a meta-analysis on the results of the effects of reactance, could help enlightening the field. A future bibliometric could be done within specific consumer studies, for instance, what would more clearly state the main interests for reactance researchers in the field. The same could be done for psychology and therapeutic researchers.

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ⁱ Scimago Journal Rank - It expresses the average number of weighted citations received in the selected year by the documents published in the selected journal in the three previous years