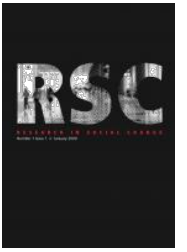


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# DIFFERENCES BETWEEN PSYCHOTHERAPY AND COUNSELLING. WHO IS LOOKING FOR AND WHO NEEDS THEM?

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***Abstract:*** *According to statistical forecasts in modern societies is trend of mental disorders growth, especially anxiety and depression. At the same time there will be probably present higher demands for professional psychosocial support. Psychotherapy and counselling as talking interventions are part of the psychosocial support, needed when people can't resolve their (mental) problems by themselves. The article deals with the question about differneces between those two professions. Are those differences artificial, is there any argumented facts in favour of different proponents? For this purpose we have examined different definitions of counselling and psychotherapy, training standards, techniques and skills, ethical standards, treatment outcomes, depth of treatment and clients expiriences.*

***Key-words:*** *counselling, psychotherapy, differences, similarities*

## 1. Introduction

Counselling and psychotherapy, as talking interventions, are ways of responding to a wide range of human needs. Counselling and psychotherapy provide opportunities for those seeking help to work towards ways of living in more satisfying and resourceful ways. In their current form, counselling and psychotherapy are less than 100 years old, but they have roots in much older ways of providing help and care. Counselling and psychotherapy have developed in order to respond to modern circumstances. They are living practices which are open to change and which evolve in response to changing needs. Consequently, it is impossible to define counselling and psychotherapy once and for all.

Counselling as a profession grew out of the progressive guidance movement of the early 1900s. Its emphasis was on prevention and purposefulness - on helping individuals of all ages and stages avoid making bad choices in life while finding meaning, direction, and fulfilment in what

they did. Today professional counselling encompasses within its practice clinicians who still focus on the avoidance of problems and the promotion of growth, but the profession is much more than that. The focus on wellness, development, mindfulness, meaningfulness, and remediation of mental disorders is the hallmark of counselling for individuals, groups, couples, and families across the life span (Gladding 2014).

Traditionally, psychotherapy has focused on serious problems associated with intrapsychic, internal, and personal issues and conflicts. It has dealt with the recovery of adequacy (Casey 1996). As such, psychotherapy, especially analytically based therapy, has emphasized (1) the past more than the present, (2) insight more than change, (3) the detachment of the therapist, and (4) the therapist's role as an expert. In addition, psychotherapy has historically involved a long-term relationship (20 to 40 sessions over a period of 6 months to 2 years) that concentrated on reconstructive change as opposed to a more short-term relationship (8 to 12 sessions spread over a period of less than 6 months). Psychotherapy has also been more of a process associated with inpatient settings - some of which are residential, such as mental hospitals - as opposed to outpatient settings - some of which are nonresidential, such as community agencies. However, in more modern times, the distinction between psychotherapy and counselling has blurred, and professionals who provide clinical services often determine whether clients receive counselling or psychotherapy. Some counselling theories are commonly referred to as therapies as well and can be used in multiple settings. Therefore, the similarities in the counselling and psychotherapy processes often overlap (Gladding 2014).

## 2. Differences or similarities?

### 2.1. Accepted definitions of counselling and psychotherapy

To find an unambiguous answer on question "What are the differences between counselling and psychotherapy?" is not simple, if we want to find argumented answers, not just opinions and assumptions. If we just look at definitions of psychotherapy and counselling, we can find more similarities than differences. European Association for Counselling (EAC) defines that profession as an interactive learning process contracted between counsellor(s) and client(s), be they individuals, families, groups or institutions, which approaches in a holistic way, social, cultural, economic and/or emotional issues. Counselling may be concerned with addressing and resolving specific problems, making decisions, coping with crisis, improving

relationships, developmental issues, promoting and developing personal awareness, working with feelings, thoughts, perceptions and internal or external conflict. The overall aim is to provide clients with opportunities to work in self-defined ways, towards living in more satisfying and resourceful ways as individuals and as members of the broader society (EAC 2013). American Counselling Association (ACA) defined counselling as a professional relationship that empowers diverse individuals, families, and groups to accomplish mental health, wellness, education, and career goals (Kaplan, Tarvydas and Gladding 2014). European Association for Psychotherapy defines the practice of psychotherapy as the comprehensive, conscious and planned treatment of psychosocial, psychosomatic and behavioural disturbances or states of suffering with scientific psychotherapeutic methods, through an interaction between one or more persons being treated, and one or more psychotherapists, with the aim of relieving disturbing attitudes to change, and to promote the maturation, development and health of the treated person. It requires both a general and a specific training/education (EAP 2003). As we can see, all three definitions expose professional relationship between trained or educated professional(s) and client(s) with final goal to rise client's satisfaction level on different life areas, including mental health.

### 2.2. Trend of integration

Next argument that speaks in favour of similarity between counselling and psychotherapy is worldwide trend of psychotherapy and counselling associations merging and their argumentation about similarities between those two professions. Irish Association for Counselling and Psychotherapy (IACP) position is that there is no difference between counselling and psychotherapy as they have found no practical or research evidence to support differentiation. IACP describes counselling and psychotherapy in the following way: counselling/psychotherapy is for anybody. It can be of great support in times of crisis or change. Both counselling and psychotherapy involve the provision of professional assistance to people who are experiencing personal issues, in order to help alleviate those difficulties. Counselling tends to deal more with immediate issues that may have arisen more recently e.g. bereavement or relationship breakdown. Psychotherapy tends to deal with deeper, more longterm issues that may be rooted in the past e.g. a trauma, or, serious mistreatment where the effects of such are ongoing. Counselling and psychotherapy are terms that overlap heavily and are often used interchangeably. They incorporate the giving of attention and respect in a confidential relationship. It provides an opportunity to explore,

discover and clarify ways of living more resourcefully towards greater wellbeing. Stress, anxiety, bereavement, addiction and relationship issues are some of the reasons why people engage the services of a counsellor/psychotherapist. (IACP 2013). Although Psychotherapy & Counselling Federation of Australia (PACFA) shares similar opinion, PACFA have found some differences: counselling and psychotherapy overlap considerably, but there are also recognised differences. While the work of counsellors and psychotherapists with clients may be of considerable depth, the focus of counselling is more likely to be on specific problems, changes in life adjustments and fostering clients' wellbeing. Psychotherapy is more concerned with the restructuring of the personality or self and the development of insight. At advanced levels of training, counselling has a greater overlap with psychotherapy than at foundation levels (PACFA 2012). Having said that, the British Association for Counselling and Psychotherapy (BACP) have found no empirical evidence that there is a difference between counselling and psychotherapy. In terms of role, value and effectiveness, BACP believes that each occupational area has equal value. BACP's research committee is an independent group, comprised of psychiatrists, psychologists, counsellors and psychotherapists from the UK and overseas and including several non BACP members and is tasked with offering independent advice on research issues to BACP. In 2006, the committee found there was no theoretical, practical or research rationale for distinguishing between counsellors and psychotherapists. (BACP 2009).

### 2.3. Possible ways of distinguishing counselling from psychotherapy

Some ways of distinguishing counselling from psychotherapy include: (1) psychotherapy focuses on personality change of some sort, while counselling focuses on helping clients use existing resources for coping with life better, (2) they are the same qualitatively, but differ only quantitatively in that, therapists listen more and engage in less informing, advising and explaining than counsellors, and (3) psychotherapy deals with more severe disturbance and is more medical term than counselling (Corsini 2008).

But those differences are artificial in the light of the fact that counselling was advice giving orientated just in the beginning stage (the end of 19. and the beginning of 20. century) (Nugent and Karyn 2009). In the 1942 Carl Rogers published his book Counselling and Psychotherapy, which challenged the counsellor-centred approach of Williamson as well as major tenets of Freudian psychoanalysis. Rogers emphasized the importance of the client, espousing a nondirective approach to counselling. His ideas were both widely accepted and harshly criticized. Rogers advocated giving clients

responsibility for their own growth. He thought that if clients had an opportunity to be accepted and listened to, then they would begin to know themselves better and become more congruent. He described the role of the professional helper as being nonjudgmental and accepting. Thus, the helper served as a mirror, reflecting the verbal and emotional manifestations of the client (Gladding 2014; Stepišnik Perdih, 2018).

When we talk about listening skills, we must be fair enough to admit that active listening is probably the central skill in developing and maintaining counselling relationship, not just in psychotherapy. Active listening in counselling process has a number of important consequences: (1) establishing rapport, (2) establishing trust, (3) bridging differences, (4) helping clients to disclose, (5) helping clients to experience feelings, (6) gathering information, (7) creating an influence base, and (8) helping clients to assume responsibility (Nelson–Jones 2014).

Information giving or psychoeducation is important part of counselling and psychotherapy processes. We know that 10 % of clients with panic attacks feel better and don't need further psychotherapeutic treatment, when they get detailed information about this disorder (Kocmur 1999). Psychoeducation is a practice that provide the opportunity to learn about the lifestyle adjustments and new skills needed to manage the condition, so that a person might become a more active participant in the treatment process (Lukens and McFarlane 2004; Stafford and Colom 2013). It is an approach to the treatment of mental illness that has developed over the past four decades (Goldman 1988; Hatfield 1988), and is concerned with how to influence a person's internal world of thoughts and feelings as a means to change behaviour (Bauml et al. 2006).

The term counselling may be just as appropriate as psychotherapy even in medical settings, and increasingly it has come to be viewed as either the same as or similar to psychotherapy (Nelson–Jones 2014). The term psychotherapy derives from Ancient Greek psyche (meaning breath, spirit, soul) and therapeia. When therapeia is translated as healing or medical treatment, it can have more medical hint. But Ancient Greek word therapeia can be also translated as attendance (Collins English Dictionary 2014). In that case psychotherapy is much more than just healing of the soul, it is not limited just in medical setting, and is more similar to counselling. Many psychologists, as Corey (2012) and Patterson (1986) use the terms counselling and psychotherapy interchangeably, and Patterson concludes that there are no essential differences upon which agreement can be reached. Both counselling and psychotherapy use the same theoretical models and stress the need to

value the client as person, to listen sympathetically, to hear what is communicated, and to foster the capacity for self-help and responsibility.

In fact, although differences in the training of mental health professionals exist, over the years their professional duties have begun to overlap (Todd and Bohart2006). For instance, today, some school counsellors do therapy, counselling and clinical psychologists act as consultants to the schools, psychiatrists are social advocates, social workers and others can be psychoanalysts, mental health counsellors do family therapy, and psychologists vie for the right to prescribe psychotropic medications (Johnson 2009). The differences in the training of counselling and psychotherapy are more quantitative, than qualitative. For example the EAC Training standards predict three main pillars: (1) course work, (2) counselling practice under supervision, and (3) personal development. In course work are included: (1) clear understanding of a core theoretical model of counselling, (2) theories of personality, (3) theories of change or client movement, (4) models of human development, (5) understanding of psychological dysfunction, (6) understanding of ethics and professional practice, (7) the history of counselling and a study of at least two other counselling approaches, (8) study of a cultural differences and awareness processes (EAC 2013). European Association for Psychotherapy (EAP) describes three elements of basic professional training: (1) personal psychotherapeutic experience, (2) practical training, and (3) theoretical study which should include the following elements: (1) theories of human development throughout the life-cycle, (2) an understanding of other psychotherapeutic approaches, (3) a theory of change, (4) an understanding of social and cultural issues in relation to psychotherapy, (5) theories of psychopathology, and (6) theories of assessment and intervention (EAP 2012). But there are quantitative differences between counselling and psychotherapy training. Counselling training last minimum three years and includes 450 hours of theory, 450 hours of supervised counselling practice, and 50 hours of personal development (EAC 2013). Psychotherapy training last minimum four years and includes 500 - 800 hours of theory and methodology, 300 hours of psychotherapeutic work with clients under supervision, 150 hours of supervision, and 250 hours of self-experience (EAP 2012).

Both professions have ethical standards which are quite similar. The counselling approach values the integrity, authority and autonomy of the client. This is expressed in a skilled and professional way in the counselling relationship (EAC 2013). In psychotherapy individual diagnostic and therapeutic services are provided only in the context of a professional

psychotherapeutic relationship (EAP 2012). Professional relationship and working alliance are most important parts of both professions. In the absence of professional relationship no intervention technique won't work. Lambert conducted an empirical analysis of common therapy factors. In his review, he identified the following four common factors and estimated how much each factor typically accounts for therapeutic change: therapeutic relationship (30%), extratherapeutic change (40%), expectancy (placebo effects; 15%), techniques (15%) (Lambert 1992).

Thorne (1992) makes a strong case suggesting that it is difficult to differentiate between counselling and psychotherapy on several grounds such as problems explored (huge overlaps), goals addressed (often similar), or the notion that psychotherapy is somehow more synonymous with unconscious work than counselling. Meta-analytic studies comparing counselling with cognitive behavioural therapy for depression suggest either broad equivalence of patient outcomes or, where differences do exist, that they are small (Barkham, Moller and Pybis 2017). Ward and colleagues reported comparisons between nondirective counselling and cognitive behavioural therapy for mixed anxiety and depression and found no significant difference in outcomes for the two therapies (Ward et al. 2000). Since 2013–14, Improving Access to Psychological Therapies programme (IAPT) have published annual reports comparing the number of referrals, average number of sessions and recovery rates between the available psychological therapies. As demonstrated in Table I, whilst a greater proportion of referrals (approximately 60–65%) received CBT as compared with counselling, patient outcomes (i.e., recovery rates) have been virtually equivalent between those two interventions (Barkham, Moller and Pybis 2017).

Data demonstrate that for patients accessing interventions throughout the NHS, counselling is, to all intents and purposes, as effective as cognitive behavioural therapy in the treatment of depression for both moderate and severe levels of depression (Barkham, Moller and Pybis 2017). Cape and colleagues provide similar results. They include thirty-four studies of anxiety, depression and mixed common mental health problems treatment with brief cognitive behavioural therapy, problem solving therapy and counselling in their meta-analysis. The meta-analysis suggests that brief cognitive behavioural therapy, counselling and problem solving therapy were all effective. No significant difference was found between cognitive behavioural therapy, counselling and problem solving therapy outcomes (Cape et al. 2010).

Table I: Data extracted from successive NHS digital reports on comparisons between cognitive behaviour therapy (CBT) and counselling/counselling for depression (CfD).

| Year | Intervention | Number of referrals for depressive disorder | Average number of sessions | Recovery rate (%) |
|---|---|---|---|---|
| 2013-14 | CBT | 21,622 | 5.7 | |
| | Counselling | 13,369 | 5.4 | 45,1 |
| 2014-15 | CBT | 28,350 | 5.1 | 44,1 |
| | Counselling | 14,994 | 4.4 | 45,2 |
| 2015-16 | CBT | 35,589 | 5.8 | 45,9 |
| | Counselling/CfD | 20,011 | 5.3 | 47,6 |

Source: Barkham, Moller, and Pybis 2017

Data suggest clients accessing counselling attend fewer sessions on average than those accessing CBT (NHS Digital 2014, 2015, 2016; Pybis et al. 2017; Saxon et al. 2017). This suggests counselling may well be cheaper and therefore more cost-efficient than cognitive behavioural therapy as it achieves comparable patient outcomes.

As Thorne said addressed goals in counselling and psychotherapy are often similar (Thorne 1992). The final goal of counselling and psychotherapy is the same, helping clients to become their own counsellors or psychotherapists. Modern trends in counselling and psychotherapy tend to teach clients the skills and techniques which they can use independently in case of relapse of the problem(s) in the future. So clients can become their own counsellors or psychotherapists without lifelong dependence on counselling or psychotherapist professionals (Dryden 2006). Nowadays in the light of increasingly larger demands for time saving, lifelong dependency on psychotherapy and counselling are not appropriate anymore. In adjusting to those trends both professions have invited so called brief versions of clients treatment (Dryden 2006; Trower, Jones and Dryden 2016).

Argument that counsellors, in general, deal with less severe cases and psychotherapists with more severe ones, gains substance only when we are able to learn objectively how severity is defined and measured. How do health professionals know when a given problem falls within their area of expertise? How do they arrive at the conclusion that the problem is one which would benefit from counselling and not from psychotherapy, or from psychotherapy and not from counselling, or from both, or indeed from neither? Human

problems cannot be arbitrarily dichotomized into severe and non-severe. The judgement of severity or non-severity, more often than not, is based on the experience of the health professional involved. Nor have human problems been objectively and precisely graded, ranging from the least severe to the most severe. No such gradations or distinctions have been formulated which would allow us to classify human problems along an objective scale of measurement. Therefore, for health professionals to decide on the severity of a problem, they would need to rely on their subjective judgement which of course, despite one's vast experience, is fallible. At any rate, to arrive at a clinical judgement concerning the severity or otherwise of a given client's problems, disorders, conflicts, emotional crises or whatever, a counsellor or psychotherapist would need to be experienced and, more importantly, competent. Who one would classify as a 'competent counsellor' is not an easy question to answer. One might have years of experience and still remain hopelessly muddled and incompetent. The competence of a counsellor is related to several factors, one of which is the ability of the counsellor to get to the root of the client's problem – the diagnostic problem (Laungani 2004).

Example of how difficult it is to arrive at a correct diagnosis of a psychological disorder, is the Rosenhan study from 1973. As part of the study, he sent eight pseudo-patients (including himself) to different American psychiatric hospitals, where they presented to the psychiatrist who interviewed them a single set of symptoms, such as, 'I feel empty', 'I hear a thud', 'I feel hollow' etc. All the pseudopatients, without exception, were diagnosed as suffering from schizophrenia and were admitted to hospital. The pseudo-patients fooled the doctors, the psychiatrists on the ward. But what was even more remarkable was the fact that they were instantly recognized as being pseudo-patients by 35 out of a total of 118 real patients. The genuine patients were convinced that the pseudo-patients were journalists, professors or some such type of person, in search of a story. It is clear that the reliability and validity of a variety of diagnostic techniques remains an unresolved issue (Rosenhan 1973; Laungani 2004).

At last, there could not be a big difference between counselling and psychotherapy if both approaches arise from the same philosophical and theoretical frames. If we look at cognitive behavioural therapy and cognitive behavioural counselling, for example, both approaches derive from stoic philosophy, and employ cognitive, behavioural and mindfulness techniques (Robertson 2010). According to Elliot and Williams research for clients seem to have little regard to counselling or psychotherapeutic theory or technique, but do recognise the importance of the person who is the therapist or counselor, and the relationship they have with them. In those clients endorse

the view that it is the relationship rather than a particular way-of-working which carries therapeutic gain. Clients value talking to someone who is warm and listens in a non-judgemental manner (Elliott and Williams 2003). In that context Kwiatkowskis' (1998) questioning who is looking for and making differences between counselling and psychotherapy, whether they are professionals or clients, is in the right place. His conclusion is that differences between those professions are small, depend on the context and perception, not on content, skills and process. He suggests new paradigm, which could combine and calm down professionals of both fields and usage of the term 'counselling psychotherapist'.

## 3. Conclusion

When we are talking about professional counselling and psychotherapy within the same approach (e.g. psychoanalytic, Adlerian, existential, person-centred, gestalt, reality, cognitive behavioural, integrative, family systems, integrative …) there is no doubt that both professions arise from the same philosophical and theoretical frames. As talking intrventions are based on strong relationship between counsellor(s)/psychotherapist(s) and client(s) with the main goal of intervention: help client(s) to improve their level of contentment and teach them to become their own counsellors/psychoterapists. Modern definitions of counselling and psychotherapy are expanded. Psychotherapy is not concentrated only on mental helth issues, it includes wide spectrum of humans' wellbeing. Counselling is not just an advice giving as it was in the beginning stage. Novadays counsellors are trained for empowering clients to accomplish mental health goals and other given goals on different life areas. When we are talking about training, we must admit, that there are some differences between those two interventions. Quantitative training standards are higher for psychotherapy professions, while qualitative standards are much the same for counselling and psychotherapy. But those standards are just first step to become a professional counsellor or psychotherapist, after diploma follows process of lifelong learning.

Even researhes on psychotherapy and counselling (Ward et al. 2000; BACP 2009; Barkham, Moller, and Pybis 2017; Pybis et al. 2017) didn't find theoretical, practical or research rationale for distinguishing between counselling and psychotherapy. Data suggest counselling may well be cheaper and therefore more cost-efficient than (cognitive behavioural) psychotherapy as it achieves comparable client outcomes.

Next, frequently mentioned difference is that psychotherapy deals with more severe disturbance and is more medical term than counselling. Quite misleading. If we look at the origin of the term psychotherapy carefully, we can see, that psychotherapy can also be attendance (like counselling is defined) not just client healing. Severity of cases on the other hand is never objective. Every problem is severe for the individual client. It is on counsellor or psychotherapist to judge if he is appropriate professional to help individual clinet with his severe problem.

As we have wrote, most important factor for clients' change is warm, confidential relationship between counselor(s) and client(s), used techniques are not half so important, but still they are the factor. There could not be warm and confidential relationship in counselling or therapeutic process without appropriate techniques or counsellors' micro skills (e.g. active listening, paraphrasing, openended questions, empathy, nonjudgemental acceptance …) which are again the same in all counselling and psychotherapeutic approaches. Also other techiques (e.g. in cognitive behavioural approaches identifying and responding to automatic thoughts, intermediate and core beliefs, behavioural activation, relaxation techniques …) are used for the same purpose in counselling and psychotherapy – facilitating clients' cognitive and behavioural change.

Finally, according to data clients don't care with who they work on their progress, counsellors or psychotherapist. Everything that count is personality, acceptance and readiness to listen. So we can assume that if there some differences between counselling and psychotherapy exist, that are more or less finesses. There are a lot of secular tries to differentiate those two professions. But when we eliminate opinions and assumptions, we can confirm more similarities than differences between those two professions. And if we conclude in Kwiatkowskis' manner, maybe now, twenty years after his attempt to unify those two professions, is appropriate time to stop vaisting energy for making and looking for differneces and start setting up the conditions for cooperative help to those who need help and are not upset whether there are some differences or not.

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# INCARCERATION AS A RESULT OF THE PLAY OF INTERESTS IN THE POLISH JUDICIAL SYSTEM

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***Abstract:*** *The main aim of this article is to show one of the social trap of the Polish justice system. Using Mertonian category of 'unforeseen consequences' the authors show how the constellations of interests of the main social actors in Polish courts leads to far-from-optimal effects. Inside the system, judges, court staff, lawyers, defendants and others fall into the trap of unforeseen consequences. At the same time, from the macro-social perspective, the effects imply increasing fragmentation of society, instead of cohesion, for increasing which the whole judicial system is constructed.*

***Key-words:*** *unforeseen consequences, incarceration, imprisonment rate, Polish justice system, restorative justice*

## 1. Introduction

Penal policy is primarily perceived as part of state policy and therefore should meet the goals of widely understood 'social good' and social welfare. Considering that one key factor of social welfare is social cohesion, penal policy should limit its own impact on social fragmentation and remain open to any opportunities to restore social cohesion as far as possible.1 Penal policy is distant from the domain of market economy and seems not to be affected by the phenomena which liberal economists refer to as the 'invisible hand of the market'. However, on closer examination, the results of the study presented below indicate that in Poland this sphere is strongly influenced by crisscrossing interests of public prosecutors, defendants, courts and court staff.

[1] This view was supported by the Polish Senate in 2004 (see Warylewski 2007, 81).

We hypothesise that the judicial system in Poland is characterised by a clash of interests which produces unforeseen effects: contrary to the nominal goals of the actors involved, the system generates full prisons, ineffective deterrence and overworked court staff. The principal aim of this study is to shed some light on the consequences of relations between the main actors of the Polish justice system (hereafter PJS).

Before we focus on the results of our empirical study, we present theoretical inspirations mentioned in the introduction as well as the methodological basis. The discussion of the results is divided into two sections devoted to custodial and non-custodial sentences, respectively.

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## 2. The Polish judicial system as a field of a play of interests

Looking for an adequate language to describe the social circumstances outlined above, we can first turn to classical political economy. The 'invisible hand' is a phrase usually associated with the father of modern economics Adam Smith (2007 [1776]). Although he used this term only three times, it is commonly associated with his main idea that individuals' efforts to pursue their own interests are frequently more beneficial to the community than if their actions were directly intended to further public interest. Smith assumed that a balance between supply and demand is beneficial for economy and society, and that striving to achieve it stimulates economic growth. In his perspective, economy guided by the 'invisible hand' will best meet the needs and interests of the community in general.

As interpreted by Paul Samuelson (1948), the market will settle on product (service) distribution and prices (costs) that are beneficial to all individual members of a community (i.e. providers and users). However, Smith's idea is therefore limited to a well-functioning market (and not society as a whole), which also requires an external regulatory framework (e.g. moral sentiments). However, the concept of the 'invisible hand' is nearly always generalised beyond Smith's original uses. The idea of market exchange automatically guiding self-interest towards socially desirable ends is a central justification for the neoclassical approach. This approach assumes that markets tend to equilibrium and the actors involved have full and symmetrical access to information.

Such axioms of neoclassical economics have been widely criticised in sociology (Boudon 1982, Tittenbrun 2011) and heterodox streams of economics (Keen 2011). Also mainstream economics provides arguments against the simplified treatment of Smith's proposals. For example, neo-institutional economics points out that the actors of economic life are diverse, they employ bounded rationality (Simon 1991) and have limited access to information (asymmetric information). Consequently, their actions often miss the optimal solution and lead to unexpected or unwanted external effects. This point of view has also influenced sociology. In this study we examine in detail one of the types of Raymond Boudon's (1982) reversal effects. Drawing on Merton's (1936) unexpected consequences, the French author emphasises that in a heterogeneous, modern society aggregate effects of individual actions often lead to unplanned, unforeseen results. One example is the subjects' rational behaviour leading to effects that are unwanted for the subject (another type is aggregation effects of actions pursued by others).

In this article, we focus not only on relations within the PJS, including those between public prosecutors, defendants, courts and court staff, but also on more general results of the diagnosed state of affairs. Indeed, it produces results which are closer to reversal effects (Boudon 1982), as they are rational only from the point of view of influential actors in individual criminal cases. This situation perpetuates solutions which are ineffective from the point of view of the goals of the PJS as a whole on one hand, and public interest on the other.

In his Making Globalization Work, Joseph E. Stiglitz (2006) observes that 'the reason that the invisible hand often seems invisible is that it is often not there'. What Stiglitz refers to in particular is the problem of economic externalities which represent the impact of a bilateral transaction on uninvolved actors. In other words, externalities are costs or benefits incurred

by entities that do not participate in the transaction. In this case, the actor outside the transaction is society as a whole. Individual actors within the PJS also suffer damage as a result of the aggregation of individual rational strategies in synergistic effects. Among those suffering actors we can indicate mostly its 'users' – not only those convicted of a crime, but also their relatives (children) and, indirectly, their social environment. Last but not least, the group also includes victims of crimes, who can rarely receive any satisfactory compensation in PJS.

Although the area we studied is not related to the market as such, these observations give us an interesting point of reference for the interpretation of our results. As we present below, decisions which are rational at the level of individual cases in PJS result in crowded prisons, high rate of custodial sentences, and heavy workload of court staff (Warylewski 2007, 80–85). Therefore, we can observe here how actors who have a certain margin of freedom (Crozier and Friedberg 1980) produce reversal effects. On the one hand, their actions generate negative externalities at the level of the system as a whole. On the other, at the level of the agent (within the PJS), individual actors also suffer reverse effects of their own actions. In brief, we approach the PJS as a case of reversal effects that generate external effects (outside the system) and undesirable results inside the system. Although they are theoretically possible to separate, we treat both phenomena as two sides of the same coin.

### 2.1. Penal policy in Poland as a factor of social fragmentation

Between the beginning of transformation in 1989 and 2003 the number of crimes in Poland tripled (Warylewski 2014, 335–336) and crime detection rates increased (from 55% to 67%) (Warylewski 2014, 342). As a result, the number of cases handled by criminal courts almost tripled. Between 1989 and 2013 the number of convicted offenders serving a custodial sentence rose from forty to about eighty-five thousand (Warylewski 2014, 344). At the same time, the population of the country declined and the demographic cohorts of young men (aged 15–19 in 2011, thus 20–24 in 2016), who traditionally most often tend to become involved in petty crimes, were definitely less numerous in 2011 (approx. 1.13 million) than ten years earlier (approx. 1.6 million) (Central Statistical Office of Poland 2012).

Wacquant (2009) observes that the policy of incarceration is a result of efforts initiated by some city mayors (e.g. Rudolph Giuliani), politicians and influential think tanks, and has at least two types: an open policy of increasing prison capacity (e.g. in the US, the UK under Blair) and a less transparent policy of different practices (as in France). In his opinion, both of them

ultimately have the same goal – to isolate and incarcerate those who do not fit in the neo-liberal vision of society (Wacquant 2009, 19–27; see also Bauman 2005), one which believes that, in the words of Margaret Thatcher, 'There is no such thing as society. There are individual men and women, and there are families' (Thatcher 1987). Michał Kozłowski, the Polish translator of Wacquant's (2009) study, rightly observes that the mechanism of legal exclusion is essentially transpolitical. More restrictive provisions of the criminal code and a corresponding penal policy introduced by the coalition government of Law and Justice, the League of Polish Families and Self-Defence (coalition of PiS, LPR and Samoobrona in 2005–2007) were among the very few changes which were not reversed under the Civic Platform and the Polish Peasant Party (coalition of PO, PSL in 2007–2015) (Kozłowski 2009, 13).

In public (especially media) discourse, increasing penalties is perceived as the main deterrent against crime. Such an approach is both outdated and inconsistent with reality. New penal regulations have often been implemented in reaction to shocking incidents that received broad media coverage, such as the murder of the police officer Andrzej Struj in the course of his intervention in a street fight (Wrzosek 2014). Hasty changes mostly consist in increasing maximum prison sentences for particular criminal offences. Adopted by many Polish politicians, this approach results from a stereotypical conviction that increased penalties (i.e. custodial rather than non-custodial sentences, perceived as 'less rigorous' or 'less punitive') have a strong impact on reducing crime figures. In fact, however, this correlation is uncertain and can only be observed with regard to certain types of crimes and offenders, mostly the heaviest. In the case of sentencing policy and the execution of penalties in Poland, the 'unexpected consequences' mechanism produces results which are rational only from the point of view of the more influential actors in individual criminal cases. Indeed, criminal proceedings can be approached in terms of a peculiar game, similar to the interplay of market forces. Here, the most important players are those actors who are the most influential and have the most status and power – the counsel for the defence, trial judges and public prosecutors. The weaker ones include the defendants, probation officers, judges sitting in the enforcement divisions and penitentiary courts, the third sector, and, last but not least, the victims of offences.

We explain this in more detail below, but here we can emphasise that this game of crisscrossing interests promotes solutions which are ineffective from the point of view of the goals of penal policy and the interests of some actors within the system. In spite of the effort of individual members of court staff who aim to reduce the amount of work they have to perform, the system of

execution of penalties not only generates high economic and social costs, but also, in the long run, increases their workload. The principal aim of the court is obviously to administer justice and execute sentences. However, what becomes apparent in the absence of a stable and uniform penal policy is professional and institutional interests of the parties to the proceedings and other subjects involved.

The result – a high rate of incarceration and the overcrowding of prisons – misses not only the whole society's interest, but also the intentions of penal policy-makers (Szymanowski and Migdał 2012, 442–443). Punishment should obviously reflect the social consequences of the act. This, however, does not mean that incarceration is the only available answer (Zalewski 2006, 204–205). Although isolation certainly has its functions, such as prevention, its final outcome involves all the positive and negative (including those unforeseen) impacts on the prisoner during this time (Warylewski 2006, 22). This certainly does not mean that we intend to question the substantive or procedural correctness of criminal judgments. Rather, the problem concerns utilitarian consequences stemming from court decisions and from the practice of their implementation or, to be more precise, from unexpected consequences and perverse effects of adopted solutions, some of which are presented below.

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## 3. Methodology of the study

The results presented here are the effect of observations made during the evaluation of Restorative Justice Centres in Poland (in polish: Centra Sprawiedliwości Naprawczej). The study itself was focused on practical implementation of restorative justice in cooperation with central and local government. As established in the course of the study, the interplay between the intersecting interests of the main actors of the PJS produces a particular state of balance which, however, involves unforeseen consequences (in Mertonian sense of the term) for the actors of the system and society as a whole. The intersecting interests of these actors shape a certain game between them (Crozier and Friedberg 1980), one that enables them to meet their ambitions, but at the same time generates externalities for the system and the actors themselves. The main objective of this study was to examine the results of the above mentioned research for the presence of unforeseen consequences.

We have identified four key actors of the PJS and their motivations (obviously simplified for the sake of the integrity of the article); these actors are involved in the Restorative Justice Centres presented below and (indirectly) create their outcomes:

- Defendants and defence: try to avoid penalty altogether or receive the least severe punishment possible,
- Public prosecutors: wish to avoid accusations of leniency and demonstrate effectiveness (a high proportion of secured convictions and, preferably, prison sentences),
- Juries/courts: prefer safe convictions which would stand if appealed, and avoid sentences which might be perceived as unduly lenient,
- Court staff: want to efficiently manage courts and execute sentences (low effort, high efficiency).

The research concerned petty offences and less serious criminal offences, which form the majority of cases handled by Polish courts2. The study involved twenty-four in-depth interviews conducted in three regional court jurisdictions:

- Toruń (T) and Białystok (B), which have their Restorative Justice Centres
- a region referred to as (D); a large city without a Restorative Justice Centre
- In addition, other research methods have been applied:
- focus group interview,
- standardised interview,
- official records search query.

Although focused on the centres themselves, the research also provided extensive information concerning practical problems and dilemmas of the PJS.

[2] The study was part of the project entitled 'Pilot implementation of the "Community Court" model in Poland as an institutional bridge between the judiciary, the local and regional government, and community organisations that facilitates practical implementation of restorative justice', which was jointly implemented by the Nicolaus Copernicus University in Toruń, the University of Białystok, the University of Gdańsk and the Court Watch Poland Foundation. The study was financed by the National Centre for Research and Development in Warsaw, Poland, Contract No. IS-1/039/NCBiR/2014.

## 4. Custodial sentences as the inescapable heritage of the twentieth century

Courts make extensive use of provisions which enable them to grant motions for voluntary submission to penalty. In 2014 penalties other than imprisonment amounted only to about 36% of the total (fines – 24%, restriction of liberty3 – 12%). In cases involving medium offences, the most frequent result is a suspended prison sentence. Although the remaining 64% of penalties were custodial sentences, the restrictiveness of courts was in fact only superficial, considering that 51% of the total were suspended and carried an actual risk only in the case of repeat offenders. Immediate custodial sentences amounted only to 13% (Mieszkowska and Orowiecka 2016, 14).

When faced with a choice of seeking a fine, restriction of liberty or a suspended prison sentence, public prosecutors choose the last of these options. The level of trust in the deterrent value and the actual execution of the first two penalties is lower than in the case of suspended prison sentences. As estimated by members of probation staff interviewed in this study, only about 20% of court fines are actually paid. In fact, the proportion is negligible considering that the entire figure represents payments made by offenders afraid of losing their creditworthiness (as they might appear on the register of debtors), and those willing to close their cases and recover their psychological well-being. The situation is similar when it comes to restriction of liberty. In 2003 in Poland, almost half of the offenders failed to perform their community service sentence and provided some kind of excuses (Zagórski 2003, 133). On average, considering only those cases in which such punishment was served in some proportion at all, the number of completed hours was a quarter shorter than ordered by courts (Zagórski 2003, 145). Such indicators lead Polish courts to the presumption that the restriction of liberty is a very ineffective penal instrument. In fact, there is no effective mechanism to supervise offenders or assess which of them are ready to fulfil their obligations imposed by this type of punishment. If only a part of expenditures per prisoner was spent on such an mechanism, the outcomes would be better.

The popularity of suspended prison sentences is based on the assumption made by prosecutors and judges that fear of prison is a better tool of re-socialisation than any other 'less severe' penalty. In fact, the situation stems from the established routine of prosecution service: public prosecutors want to avoid accusations of leniency and thus find it difficult not to seek a custodial

[3] Most often community service.

sentence. Their offer to the defendant most often involves a suspended prison sentence rather than a different form of punishment, classified as more lenient, but at the same time unavoidable (e.g. restriction of liberty, such as community service). This has been the case particularly since the introduction of 'voluntary submission to penalty', which obliges the court to mitigate punishment. On the other hand, prosecutors are not inclined to agree to less severe punishment than a prison sentence.

*New regulations introduced a few years ago make it possible for the offenders to voluntarily submit to penalty negotiated with the prosecutor. (…) the only option acceptable to the prosecutor is a prison sentence. Not a fine, not restriction of liberty; it has to be a prison sentence, even if it's suspended.* [a judge of regional court: D (JRCD)]

The most frequent form of mitigating a custodial penalty is its suspension rather than imposing punishment of a different type (e.g. restriction of liberty). However, in the subjective perception of offenders, receiving a suspended prison sentence is almost as good as an acquittal.

In practical terms, if custodial sentences are not activated (as a result of re-offending) the offenders do not suffer any penal consequences of their acts. Nor are they subjected to any social reintegration programme, with the exception of some redress to the victim in the course of plea bargaining, when the suspension is at stake. In this way, a prison sentence in practice turns out to be less severe than a heavy fine or community service.

*Restriction of liberty is a much more severe punishment because you actually have to do something [community service]; if it's a fine, you have to pay it. And a suspended prison sentence – 90% of offenders who receive it practically treat it as an acquittal. [JRCD]*

In general, courts tend to pass suspended custodial sentences sought by the prosecution, considering that if the accused and the victim agree to the proposal there are generally no grounds to reject it. Also, as generally perceived by court staff, such decisions reduce the heavy workload of the courts.

*In a simple case, the court can open the trial regardless of plea bargaining. But some cases involve twenty or thirty witnesses and several defendants, so it's rational that the court approves the settlement. When the prosecutor seeks such a penalty [a suspended custodial sentence] and the defendant pleads guilty and doesn't contest the suspended prison sentence why shouldn't the court approve*

*this? The alternative means a trial which might take half a year and can conclude with exactly the same sentence as the one initially proposed by the prosecutor and the defendant. As a result, courts most often grant such motions.* [JRCD]

Accepting the thesis of rationality of actors, we can say that in terms of professional satisfaction, public prosecutors are content with a considerable proportion of their motions for conviction without trial being granted, judges – with cases being smoothly decided, and counsels for the defence – with the minimum severity of punishment. In addition, the former two improve their efficiency statistics, and privately appointed counsels receive their fees. All this can be achieved thanks to the quasi-optimal solution, whereby the defendant plea-bargains his case with a view to receiving the least severe punishment possible and, often much to his or her relief, the court passes a suspended custodial sentence.

Even assuming that all parties act in good faith and that professional lawyers perform their duties for the benefit of their clients or public interest as they perceive it, the result is a large number of suspended custodial sentences which are often activated. As we will see below, this, in turn, leads to an increasing prison population and generates high social costs: opportunist attitude to law (as result of treating suspended sentences in terms of 'a pardon'), high rate of return to crime, reintegration of former inmates, broken families, etc. The result involves undesirable social effects – excessive incarceration and barriers to institutionalisation, efficiency and effectiveness of non-custodial penalties. We can say that the PJS needs a further optimisation of the contract (better adapted countermeasures) and control (which does not imply a greater administrative control but rather a search for equilibrium between political oversight and the autonomy of the system).

As we mentioned above, one could expect that frequent use of the procedure described above would lead to a decline in the rate of incarceration. In fact, the figures indicate the opposite tendency. Polish prisons have been filled to almost a hundred per cent of their capacity for a decade. Poland has a high rate of incarceration: 193 per 100,000 of population in 2018, the highest in the European Union, except the Baltic States and the Czech Republic (Prionstudies 2018).

Table 1: Prison population rate in 2018 (top 20 jurisdictions in Europe)

| **Ranking** | **Title** | **Prison Population Rate** |
|---|---|---|
| 1 | Russian Federation | 397 |
| 2 | Belarus | 364 |
| 3 | Turkey | 288 |
| 4 | Georgia | 268 |
| 5 | Azerbaijan | 235 |
| 5 | Lithuania | 235 |
| 7 | Moldova (Republic of) | 212 |
| 8 | Czech Republic | 205 |
| 9 | Latvia | 195 |
| 9 | Estonia | 195 |
| 11 | Poland | 193 |
| 12 | Slovakia | 192 |
| 13 | Albania | 188 |
| 14 | Montenegro | 180 |
| 15 | Hungary | 173 |
| 16 | Guernsey (United Kingdom) | 165 |
| 16 | Gibraltar (United Kingdom) | 165 |

| | | |
|---|---|---|
| 18 | Ukraine | 156 |
| 19 | Serbia | 154 |
| 20 | United Kingdom: Scotland | 143 |

Source: Prisonstudies 2018.

The peak in Poland was recorded in 2006 at the level of 235 (only Latvia and Lithuania had higher rate that year); in 1989 it was only 106 (Warylewski 2014, 345–346).

The figures show that the conviction that suspended custodial sentences serve as a deterrent is illusory (as we stress below, about 60% of prisoners serve a sentence which was originally suspended). In fact, what one can identify here is as an 'unforeseen result' or undesirable effect: the efforts of officers of the court and court staff to reduce the number of offenders serving time bring opposite results: in the long run, prison population kept increasing until recent years (when it began to decline as a result of the demographic situation and migration).

A number of studies (Machel 2006; Villettaz, Killias and Soder 2006; Zalewski 2006; Warylewski 2006; Christie 1993) postulate that custodial sentences should be avoided in cases involving minor and medium offences not even because they are 'too oppressive', but because of their high financial and social costs. The monthly cost of maintaining prisons in Poland amounts to about 3,278 złotys (over 750 euros, data for 2017) per prisoner (Ministry of Justice of the Republic of Poland 2017). Moreover, in most cases re-adaptation of former inmates to life in society is hardly successful. Taking those sentenced away from their families and social environment and putting them in isolated prisons limits their chances of social reintegration, when they are released.

In each individual case, imprisonment involves such social costs as:

- the loss of a source of income by the prisoner's family (dependent relatives, e.g. elderly parents) and a rapidly growing risk of poverty if he or she had a job or another source of income or would be able to get one in the future;
- the loss of the prisoner's social networks; except the most hardened criminals, members of organised criminal groups, or those suffering from severe addictions, it is assumed that most offenders function in a social environment which provides them with more positive than negative stimuli and gives them economic

and social opportunities to reinvent their life without crime (Bałandynowicz 2006);
- the social costs of unsuccessful re-adaptation of the former prisoner: crimes committed, a lower sense of security in areas of their operation (ibid. 2006);
- maintaining the antisocial prison subculture and the subculture of former inmates (Miszewski 2016).

The problem is not limited to people with families or those who have reasonably stable employment. In the case of younger offenders, suspension of their sentence often stimulates their opportunist attitude to law. This is why, as probation officers comment, they should serve their penalty as soon as possible, and if an immediate prison sentence is too severe, they should receive non-custodial penalties. As we see it, the system operates under the conditions of low diversity of countermeasures. Even when it is formally possible to adapt penalties to offences, this course of action is unlikely to be taken. The above arguments indicate a general ineffectiveness of both suspended and immediate custodial sentences.

## 5. The alternative of 'restorative justice': non-custodial sentences

Problems with social reintegration of former prisoners are an important argument in support of limiting the proportion of custodial sentences. Indeed, post-penitentiary assistance is a very weak element of the penal system in Poland. During our research the problem has been raised particularly by Prison Service (polish: Służba Więzienna) officers. More generally speaking, the legislator considers former prisoners as people at risk of social exclusion (Mika 2010). Return to crime is largely dependent on the availability of solutions on which former inmates can rely to find their place on the labour market and normally function in society.

(…) *there is no efficient system which would provide adequate level of assistance from day one, so that the person, the offender, does not return to the life of crime. (…) I wouldn't put the blame only on the services which deal with these issues; in fact the problem is far more complex.* [Regional Probation Officer]

A suspended prison sentence in Poland does not have much in common with real probation. The only actual deterrent is the prospect of going to

prison (Peisert 2016, 30–31). Apart from this, there is often even no supervision, not to mention other elements of the probation process.

*If we understand probation as active involvement of probation staff, we have to say that we don't handle all suspended sentences, but only some of them. There are the so-called 'simple' suspended sentences, when the court has passed a prison sentence and suspended it for a specified trial period; these cases remain with the criminal division, and we are charged with community interviews at the most. All we do is collect information. And we can say that we don't do much about such a case; it remains with the court. So, it can happen that there is probation in terms of a trial period, but it isn't the real thing, so to speak, because there is practically no work done with the offender at all.* [RPO]

Another issue concerns the fact that the type of penalty is often unsuitable for the social, professional and personality profile of the offender. The problem lies not in the measure of penalty, but in the lack of proper penal and re-socialisation impact. For example, offenders with steady jobs lose them once convicted, which makes them unable to provide financial compensation to the victims. In this context, it is often recommended that instead of a suspended prison sentence, which has a limited impact on the change of attitude, or immediate prison sentence, which is a severe penalty without a restorative value, such offenders should pay a fine and attend compulsory therapy or awareness-raising courses.

On the basis of his professional experience, the spokesperson for the Regional Inspectorate of Prison Service estimates that between 70% and 80% of criminal offences in Poland are committed while drunk, or as a result of alcohol or drug abuse. Regional Probation Officers frequently compared Polish penal policy to that adopted in Britain, which far more extensively relies on the use of non-penal measures:

*In Britain, there's a programme for people who committed offences while drunk. (…) the offender sentenced by the court has to complete a course, a kind of therapy (…). For example, in one of such sessions they meet the victim. (…) and it's been found quite effective (…). When a probation officer in Britain finds out that someone has committed a drink-driving offence, they, or the court, send them to such a therapy, such a course, which he or she has to complete. In Poland, we tend to think that increasing penalties will solve the problem.* [RPO]

This mechanism, in which offenders persistently commit minor offences under the influence of alcohol as a result of their condition and (as is often the

case) receive a number of suspended prison sentences, is particularly detrimental not only to the offenders themselves, but also to their social environment. In addition, it is socially ineffective. When, following their return to crime, the court finally decides to pass an immediate prison sentence, the sentences which were previously suspended become activated and the offenders end up serving a relatively long period in custody. On completion of the sentence, their family, social and professional relations are in decay, which makes a return to addiction quite likely.

The effectiveness of court probation service staff working with adults is limited due to their heavy workload. In 2014 there were 3,118 probation officers and 15 thousand unpaid offender managers. As on 1 January, there were 401.4 thousand open probation cases, 267.7 thousand of which were handled by probation officers; they supervised 100.9 thousand offenders, 107.7 thousand restriction of liberty orders and 50.9 thousand other cases (penitentiary, electronic monitoring, etc.). In this way, each court probation officer statistically handled 85.6 cases at the same time (Ministry of Justice of the Republic of Poland 2015).

Another problem concerns excessive procedural requirements at various stages of the probation process, and excessive court procedures in general. They have been designed without taking into account, even theoretically, the amount of time and effort required from court staff not only to fully comply with them, but even to perform them at a minimum acceptable level. In the last ten years, the amount of work required to handle a single case has considerably expanded. Although the number of cases is statistically almost the same, this does not reflect an increase in the administrative and procedural workload. One of the interviewed probation officers commented that the time left for the actual probation work was severely limited. Indeed, it appears that financial resources allocated to probation service are a bare minimum required to fulfil its duties and are far insufficient to perform them effectively. In this context, non-governmental organisations specialised in providing assistance to victims of domestic violence or rehabilitation of substance abusers can offer more. In fact, without the involvement of the third sector the task would be almost impossible.

As a result of insufficient re-socialisation support, a considerable number of offenders who received suspended custodial sentences return to crime. According to current estimates from probation staff, about 60% of prisoners serve activated suspended sentence. Consequently, prisons are crowded. Also, Szymanowski and Migdał (2014) observe that more than a half of inmates are incarcerated for at least the second time.

Implemented as a punishment alternative to imprisonment, electronic monitoring can even aggravate the problem of insufficient funding for the development of restorative justice tools. This can lead to increasing the number of 'new poor' (Bauman 2005) excluded from the mainstream of society rather than to their reintegration.

The re-socialisation impact of non-custodial penalties is generally ignored. Although seemingly more lenient, they can play their role if a proper system of supervision is in place. Also, they do not generate additional social and financial costs of reintegration of former prisoners.

The court passing a non-custodial sentence can delegate direct supervision of the offender to probation service or a non-governmental organisation. Above, we identified these actors as weak, with less bargaining power within the system. Below we are going to show why. Although the option to delegate supervision would reduce the amount of work performed by court service and use the potential of the third sector, in practice courts do not often take such decisions. Judges tend not to trust non-governmental organisations. In the view of the courts, the instability of their funding and, consequently, working from project to project, creates the risk of discontinuity of re-socialisation or reintegration of particular individuals. This structural barrier prevents the delegation of supervision of offenders sentenced to community service. As a result, such penalties are outnumbered by suspended custodial sentences. On the one hand, members of probation service appointed by the court can guarantee proper reaction in difficult cases, when offenders avoid supervision, return to crime (e.g. domestic violence) or cannot cope with substance abuse. On the other, contact between probation staff and offenders is sporadic and their supervision is practically limited to the carrot and stick approach: rewarding with a favourable report and threatening with the prospect of activating the sentence.

## 6. Conclusions

The excessive proportion of suspended prison sentences reveals a mechanism of social fragmentation as well as social exclusion. The solution which is effective from the point of view of the court, court staff, prosecution, defence and public funds, is also superficially beneficial for the offender. Instead of receiving assistance from the state (or the local community), all he or she receives is the suspension of the sentence, which he or she often treats in terms of 'a pardon'. In fact, however, in the case of persons in danger of social exclusion, this means that the solution of the problem is only postponed

– if the offender reoffends, the problem, or problems, aggravate and the opportunities and motivation to solve them diminish.

As we have shown above, the conditions for the suspension of the sentence are in fact often violated. As a result, all actors within the system become victims of unforeseen consequences. The defendant is threatened by social exclusion and the lack of real support. Court staff are burdened with work and their effectiveness is questioned. Judges and prosecutors enjoy short-term successes, but ultimately also have to work more. Society as a whole becomes a victim of negative externalities.

In view of these considerations, it might be possible to expand Wacquant's (2009, 39–47) conclusions on various types of the policy of incarceration to include another type – the policy of incarceration as an unforeseen and, as far as we can see, unexpected consequence. Importantly, it needs to be noted that in this context 'unforeseen' does not at all mean 'unintended'.

In Poland, the policy of incarceration cannot be declared openly, perhaps because the memory of political prisoners of the communist period is still alive. However, a number of mayors are building up their support also by taking measures which aim to 'clear' their towns and cities of 'unwanted elements', hence increased CCTV surveillance, more municipal police patrols, pushing out poverty (homeless shelters, low-standard council housing) to the outskirts. As argued in the present article, increased incarceration can also be identified as an unforeseen consequence of the interplay between intersecting individual and institutional interests, whereby social interest (reintegration of those socially excluded) is pushed aside.

As described above, the play of interests of the actors involved in the PJS generates results which are far from conducive to social welfare and decrease social cohesion. Owing to its inconsistency, the PJS became open to the play of interests of its actors, which brings various external effects, with a high rate of imprisonment as the most visible (financial costs, overcrowding), and many others less visible (social costs). Unfortunately, the voice of Polish penologists, who call for an effective system of re-socialisation of offenders in the name of rebuilding social cohesion affected by penal policy, has not yet been heard.

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# RE-ADJUSTMENT IN THE HOME COUNTRY – THE EFFECTS OF RETURN MIGRATION AND TRANSNATIONALISM

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***Abstract:*** *This paper analyses how returned and transnational migrants can affect development and social change in the home country. It focuses on the Shkodra Region in Albania. Returnees and transnational migrants use the financial and social capital acquired during migration as mechanisms to re-adjust in their home country, while at the same time affecting development and social change. The paper deals with a specific returnees' group, entrepreneur-returnees, and raises some main research questions: How is the social and cultural capital gained during migration used while setting up new enterprises? In what scale does this capital determine the success of the undertaking?*
*Acting as agents of development, these migrants have taken advantage of their migration experience, especially in the opening of new enterprises. This process has also involved the non-migrant population through the introduction of new employment possibilities and the transmission of new ideas and knowledge.*

***Key-words:*** *development, entrepreneur returnee, financial capital, social capital, transnationalism*

## 1. Introduction

Return migration is a phenomenon that has emerged in the Albanian context, especially after the 2000s. Owing to various reasons, such as the relative improvement of the economic and social situation in Albania, the economic crisis that hit the primary countries of destination—Italy and Greece—, or the desire to invest in the home country, the number of returning migrants has been on the rise, peaking in 2013. The impact of the migration experience is seen especially in how return migrants become self-employed and generate their income. Some return migrants have invested the financial and social capital accumulated over their migration experience in undertakings that have contributed to economic and social changes in their home country. Several theoretical approaches consider migration as a promoter for development in the origin country. In addition to economic remittances and

diaspora, theoretical approaches also consider return migration as a key mechanism of the migration-development nexus, since it contributes through the repatriation of financial capital saved and enhanced human capital (King, Lulle 2016). Whereas Cassarino explains the involvement of returnee entrepreneurs in regional economic development through the theories of return migration, transnationalism and social network (Cassarino 2014), Boccagni (2013) highlights the notion of social remittances as an indicator of the correlation between migrants and the home-country community.

Previous studies on return migration and entrepreneurship in Albania argue that migrants returning to Albania may be considered as agents of development (Nicholson 2004; Piracha and Vadean 2009). However, this analysis is based mostly on the financial aspect of their contribution and impact. Nicholson argues that the migration literature on Albania takes into account mostly remittances from the monetary perspective, but the positive impact of entrepreneur returnees goes beyond the financial spectrum (Nicholson 2004). While accounting for only a small share of the total number of returnees in Albania, this group has the highest potential for social and economic change, because they bring back capital, training and work experience. In their efforts to re-adjust in the home country, migrants invest their capital and transfer their knowledge, skills and experiences to the local communities in the home country. Therefore, they represent a case of exemplary social change. By setting up new enterprises, return or transnational migrants also affect the non-migrant population by providing new employment possibilities (in a region with high unemployment rates). At the same time, these non-migrant employees have contact with and acquire new knowledge and ideas from their employer, a former migrant.

This paper focuses on a specific group of returning migrants—returnee entrepreneurs—and raises some main research questions: a) How is the employment behaviour of returning migrants adjusted to the new environment in the home country, according to their previous experience in the host country? b) In what ways is the financial and social capital used in the country of origin? and c) How has the development of new enterprises established by different migrants affected the non-migrant community?

The methodology is based on a qualitative approach. Primary data is taken from 14 in-depth interviews with returning and transnational migrants. In order to fully understand the success of returnee entrepreneurs not only according to their personal perspective, I have collected secondary data from the Chamber of Commerce on the number of employees, lifetime of the business and annual revenues.

Returnees and transnational migrants who invest in Albania rely on their experience and networks they have established in the country of destination to re-adjust to the country of origin. Their jobs during the time of their migration contribute significantly to the kind of entrepreneurship they have established and its success. The most successful entrepreneurs are the returning migrants that have engaged in the same type of business they worked when in emigration. Acting as agents of development, they have taken advantage of this experience specifically by opening new enterprises. Their success is based on the acquired financial and social capital in the countries of destination. The effect of returning migrants' entrepreneurship is multifold. It comprises the financial aspect—financial capital accumulated abroad and invested in the origin country—; and the social capital—knowledge, experiences and networks that are transmitted to the non-migrant population. In addition, these enterprises involve the non-migrant population by creating new employment possibilities and passing through new ideas and knowledge. Introducing new and previously unknown products and services, they also orient the local producers to increase or diversify their products, in order to meet the enterprises' demand for raw materials. This paper focuses on successful life stories, even though they account for only a small share of the total number of returnees in Albania. The paper has selected successful life stories because their impact is more notable in the local community in the home country. The success of entrepreneur migrants is easily noted and spreads quickly across a small country such as Albania. This is evidenced also by the fact that often they are featured in the media. For most of the returnees, the re-adjustment process is hard, so return migration in Albania is not stable. None of the returnees considers themselves as definitively resettled and prefers to maintain relations with the previous migration country. In order to maximise their possibilities for developing their business initiatives, some of the returnees remain transnational. Transnationalism is also used as a safety plan if the returning migrant tries to migrate again.

## 2. Theoretical approach and context

Whether or not migration leads to development in migrant-sending countries is a debate with both optimistic and pessimistic approaches within the domain of migration studies (De Haas 2010; King and Lulle 2016). Migration can boost development through financial and social remittances, or it can harm development due to brain drain or because it heightens the reliance on migrant remittances and regional inequality (De Haas 2012; Levitt and

Lamba-Nieves 2011). According to De Haas, the role of migration on development should not be overvalued, and neither should the everyday contributions of returnees or transnational migrants to improve their wellbeing, living standards and economic conditions in the origin country be undervalued. Migration optimists tend to consider migrants as agents of development that act through counter-flows of knowledge and/or through return from the macro level (country) to the meso level (community), as well as on the micro level (De Haas 2012). The impact of migration varies according to the return preparedness, the home country's political, economic and social context or the way remittances are used (Cassarino 2014; Levit and Lamba-Nieves 2011). One of the main channels through which migration may contribute to development is the entrepreneurial behaviour of returning migrants (Triandafyllidou 2016; Naude, Siegel and Marchand 2015; Lucas 2010). Return migration can affect the labour market with this entrepreneurial behaviour from an economic and social perspective. The effects of financial remittances are more visible, but the role of social remittances is also equally important. In addition to money, migrants export ideas and behaviours back to their sending communities, a phenomenon that is known as social remittances. Norms, practices, identities and social capital are the types of social remittances that are exchanged through returning migrants, visits of non-migrants in the destination country, mail, internet, telephone calls, etc. (Levitt 1998). Migrants may bring change by mobilizing the economic, social and cultural resources they have acquired while in their receiving countries. These resources consist of new ideas, and identifying and using them are fundamental elements that determine the success of an undertaking (Brockhaus and Horwitz, 2002):

> *'When the focus is on micro-level indicators, such as the role of migration in sustaining, securing and improving the livelihoods of individuals, families and communities, one is much more likely to draw positive conclusions than when the focus is on a concept of 'national development'. (De Haas 2012, 14)*

Entrepreneur migrants may be returnees or transnational migrants. In the eyes of current scholars, returnees are no longer considered to be returning "forever" to the home country; therefore, return migration is not the last phase or the completion of the migration project. Many of the returnees continue to circulate from one country to the other as transnational migrants (White 2016). In the case of returnee entrepreneurs, transnationalism may be considered a way to take advantage of the opportunities in both countries—

the country of origin and the country of destination—in order to maximise their income. According to Boccagni and Decimo (2013), social remittances should be analysed based on the literature on migrant transnationalism, especially on transnational families. Research on the latter has highlighted that both migrants and non-migrants, as members of the same households, maintain significant ties. Returnees continue to maintain the transnational networks, which are highly relevant after their return in the economic, social and emotional dimensions. They continue to take advantage of the ties with their former country of residence when they are back in Albania to make their living through the post-return transnationalism (Dahinden 2010, Carling et. al. 2014). Transnational movements may be seen as a strategy for an easier re-integration in the home country, as a way to take advantage of the resources in the country of origin and the country of destination at the same time, or as a "ground" to be used if reconsidering migration.

**The Albanian Context**

The local context in the country of origin is also very important. The favourable conditions for enterprises and new investment ideas, the openness of the local communities to new types of services and the awareness of the citizens vis-a-vis their obligations or economic and political stability are additional factors that may either support or prevent the success of the undertaking and the degree of its contribution to social change. Establishing these categories of respondents' enterprises would have been impossible prior to the 2000s in Albania, given the unsettled political situation. Previous studies on remittances in Albania have stressed the propensity of non-migrants to invest primarily in household consumption, especially in the first transitional decade, taking into account that Albanians were merely surviving in the early years of the transition period (King and Vullnetari 2003).

This paper aims to analyse the role of returning migrants in the regional economic development. It targets a specific group of returnees, the returnee entrepreneurs. According to the Institute of the Statistics Albania (INSTAT) data, the economic growth rate in Albania has been rising recently, and small and medium-sized enterprises (SMEs) have been a significant contributor to such growth. These SMEs represent an engine of growth for the economy and a particular ideology of development (Black, King and Tiemoko 2003, 3). SMEs are considered to be the main pillar of economic growth today in Albania, and some of these enterprises have been set up with funds from migrants or returnees remittances. The stories of success of enterprises set up by returning migrants have been the constant focus of the Albanian media.

Return migration is known as a strategy in the Balkans, and especially in Albania. The Albanians view migration as an opportunity to accumulate the capital necessary to sustain their families for a certain period of time (Nicholson 2004). While some studies were conducted on return migration in Albania before this year (Nicholson 2001, 2004; King 2003; De Coulon and Piracha 2002; Vullnetari 2007), academia's attention toward return migration grew significantly after 2008 (Goler 2013; Labrianidis and Hatziptokopiou 2010; Mai and Paladini 2013). These studies have focused on the underlying motivations of migrants to return and the strategies they use for readjusting in the home country. Since 2003, King would argue that the lack of facilities and the remote physical infrastructure in Albania presented barriers to return migrants' establishing businesses. Several studies highlight the positive experiences of returning migrants and their skills in managing their lives in both home and destination countries. In 2002, De Coulon and Piracha found that migrants returning to Albania actually earned more than those who stayed behind. Later on, Piracha and Vadean studied the occupational choice of returning migrants by differentiating between the self-employed and the entrepreneur returnees. They conclude that returning migrants are more likely to be self-employed in business compared to non-migrants in Albania (Vadean and Piracha 2009).

While there are many studies concerning the entrepreneurship behaviour of returning migrants in Albania, the role of the social capital and cultural capital in this behaviour remains relatively unresearched. The way returning or transnationalism has provided benefits beyond the individual or household level by, for example, employing the community or transmitting skills and knowledge also remains unexplored. This paper also tries to address these two issues as research questions: How is the social and cultural capital gained during migration used while setting up new enterprises? In what scale does this capital determine the success of the undertaking?

## 3. Methodology

The research is based on a qualitative methodology that employs in-depth interviews. The interviewees were selected through personal contacts or friends and colleagues. The interviews were conducted during March 2016. Of the interviewees, one was female, and the others were all male. Males make up the majority of the returnees at both the regional and national level (73.7% are male and 26.3% are female in Albania). They also dominate in the SMEs sector. Women's entrepreneurship performance is still low and remains a challenge in Albania (SME Policy Index 2016).

The interview questions covered the entire migration cycle of returnees, which involves the return of the migrants to their country of origin. Interviews were first transcribed and then analysed. The interviewees were asked if they wanted to remain anonymous; none of them did. This is in part due to the specific target group: entrepreneurs who considered the interview as a way to promote their business.

The outline of the success of the returnee businesses was realised not merely through in-depth interviews and the returnees' self-perception. The main dilemma for the selected methodology was how to find other elements that completed the framework for the success of returnee entrepreneurs. In order to draw conclusions on the success of the entrepreneurs, I also made a business analysis for each of the enterprises. The analysis results showed that for each business, the number of employees since the business's establishment had increased. Some of them have expanded their business by creating shops/restaurant chains within the Shkodra Region, one within Albania. All of them are regular taxpayer businesses (Shkodra Municipality Data) and most of them plan to continue this business in the future.

## 4. Return Migration and Development – The Case of the Shkodra Region

This paper focuses on the effects of migration in the Shkodra Region. Its population is approx. 207,924 residents, versus 255,898 residents in 2001 (INSTAT 2017). The population decrease is due to the low birth rates, but also because of migration outflows toward more developed countries. At the beginning of the 1990s, the push and pull factors that defined migration were mostly economic factors, and migration was often seen as a survival solution. Today, these factors are much more complex, and the migrants' typology is much more diverse. The typology of migration has changed in terms of causes, destinations and time. There is a growing number of professionals that try to adapt to the labour demand in more developed countries; there is also a continuous increase in the number of high-achieving students who leave the country for better education standards and decide to stay abroad. At the beginning of the transition period, Albanians migrated mostly to Italy and Greece. By contrast, today the migration flows are oriented mainly toward Germany, France, the US and Canada. Even though out-migration is the main type of international migration in the region, there are also other kinds of movements. Circular movements, seasonal migration, return migration and transnational movements have increased since the visa liberalization in 2010,

enabling Albanian citizens to travel to and throughout the Schengen area without a visa. The liberalisation created a more diverse contemporary migration pattern in the area.

The Shkodra Region has been deeply affected by migration in recent decades. Recently, especially after 2008, the number of the returning migrants has been slightly increasing in this region. According to INSTAT (2014, 41), this figure varies from 2,63 to 4,10% of the total population of the region, and most of the returnees are from Italy. While they are registered as returnees, the Albanian context continues to produce push factors for emigration, and out migration from Shkodra is still occurring. In terms of the labour market, while some migrants have returned and contributed positively to the labour market, many others are still trying to find the ways to legally migrate to developed countries. International movement is also more organized, such as through visa application to Canada and green cards to the USA; there are set processes for students to migrate for educational purposes and for medical professionals to migrate to Germany, etc. The increasing interest to emigrate indicates a lack of economic opportunities; this also raises doubts regarding return migration, which is still sporadic and not sustainable.

Seen as a safety valve for the Albanian economy, remittances have been considered as one of the most positive outcomes of the Albanian migration. At the beginning of international migration, especially during the period of 1990–2000, Albanian migrants tended to spend their savings mainly on consumption, such as housing, food and clothes; financial help for family members in the case of events such as weddings, funerals, and baptisms; the education of children and siblings; or savings for emergency cases, such as disease (King and Vullnetari 2003; Gedeshi 2003). Through the positive lens, even this kind of consumption may be considered as contributing to the income increase and poverty decrease of the non-migrant community. Investing in a new house, migrants invest in construction, thereby creating opportunities for employment and generating income for the non-migrant community (De Haas 2012). In the following years, after having fulfilled some basic standards of living and due to the improvement of Albania's social, economic and political situation, there was a growing interest among migrants in investing financial savings to set up small and medium-sized enterprises in Albania. Evidence from INSTAT and International Organization for Migration (IOM) (2013) reveals interesting differences when comparing migrants' employment and professional skills before migration and after their return. Self-employment increased from 7.4% of the surveyed migrants before migration to 21.6% at the time of the survey (INSTAT 2013, 37). It

must be clarified, however, that not all the returnees are entrepreneurs or self-employed. Returning migrants constitute a heterogeneous group of actors in terms of migration experiences, length of stay abroad, mobilization of resources, legal status and life plans (Cassarino 2016). This paper targets only returnee entrepreneurs. On the other hand, self-employment is an important strategy for many people in Albania, where unemployment rates are high. The returning migrants' capital and social inflows to the country of origin represent an important resource for the development of different enterprises, mainly small and medium-sized businesses.

### 4.1 Migration experience abroad, accumulated financial and social capital

According to Cassarino, "Entrepreneurship" involves more than the act of economically investing in given segments of industry…It also acquires a social dimension that, in turn, impacts on entrepreneurs' patterns of resource mobilization and strategies for survival" (Cassarino 2014, 111). In my research, I found a strong relationship between the work that the migrants have been doing while in the destination country and the work they do in Shkodra. The majority of the interviewees have stayed for a long time in the host country (over 10 years), whereas others stayed for a shorter period (under 5 years) and then returned. In all cases, the period of migration has been long enough for interviewees to accumulate sufficient savings and ideas on how to set up a proper business, which could expand and change in later years. Therefore, migrants prepare a "suitcase of immaterial goods" with diverse and even contrasting contents (Boccagni and Decimo 2013, 14). When coming back, return migrants carry their experience to the home country by playing a key role in sectors such as light industry, fishery, food, leisure and consumption. In the following, I present two cases of migrant entrepreneurs who set up their enterprises based on the work they did in the destination countries. All interviewees continued the same type of activity back in their home country. The following quotes show how work in the destination country shaped the businesses undertaken by return migrants in the home country. *Adriatik* worked in a fish processing factory while in Naples and *Albamilk* worked in a dairy while in Puglia.

> ***Adriatik****: I migrated in 1991 to Sicily, Italy…I worked there in a fish processing establishment. In the first days of work I asked this question to the other employees, most of them women: "How much does this factory cost?". They would laugh at me… I started doing several jobs at the same time. Meanwhile, I accumulated the needed capital. The*

> *networks I built in Italy helped me to open the same kind of factory here, in Albania, in 1995. I have to say that it was an Italian friend of mine who came with me to visit Albania, who advised me to take the fishing ship and enterprise in Shengjin (a port in Albania) that was failing…*

*Adriatik* considers his work at the fish processing factory as the key to his success upon returning to Albania. During the conversation, this experience is mentioned often, while the issue of finances remains somewhat ancillary. His former Italian employer helped him to find and target products for new markets. Cassarino refers to this process as the "Preparedness of the returnees", highlighting their ability to mobilize their resources and contribute to development (Cassarino 2004). "The higher the level of preparedness, the greater the ability of returnees to mobilize resources autonomously and the stronger their contribution to development" (Cassarino 2004, 275). Preparation for return for *Mare Adriatik* seems to have been a combination of many circumstances: working in the fish processing factory and learning about new processing techniques, learning a new technology which was then transferred to Albania, meeting friends working in the same type of operation in Sicily. *Adriatik* was also in continuous contact with Albania. He considers that maintaining contacts with Albanian friends favoured the acquisition of the fish processing factory after it had gone bankrupt.

A similar combination is noted in the case of *Alban.* He worked as a handyman for an Italian family in Puglia, Italy, that produced cheese with artisanal methods. Learning about the artisanal and traditional methods of cheese-making, especially mozzarella, cheese production is an advantageous business for Alban. From an Albanian migrant, once received with scepticism, he became the business's most trusted worker, with whom the family shared craft secrets and the skills of milk processing. In later years, after his return to Albania, *Alban* kept in contact with the Italian family, and he still visits them occasionally and asks for technical help regarding his dairy.

> ***Alban****: I migrated in 1991 to Puglia, Italy, and worked there as a handyman in a family restaurant. They used to make their own cheese, mozzarella cheese, at the restaurant. I wanted to learn this technique, so I asked the owner to let me work in the kitchen. I was Albanian, you know, at the beginning of the 1990s, so he obviously did not agree. After some months of hard work, I gained their trust, so they invited me to help inside the kitchen… Meanwhile, I acquired this knowledge that would result so fruitful in Shkoder after my return in 1994.*

The cases in consideration share certain common features. There is a notable correlation between the type of work that the emigrants did while in migration and their line of business in the country of origin. From employees in the country of destination, migrants have become entrepreneurs in the same sector in the country of origin. Both cases deal with former migrants that return to the origin country and start businesses while keeping relationships with the former destination country. They have become transnational entrepreneurs by still using and relying on the knowledge, technology and networks gained in the destination country. Before migrating, none of them had any knowledge or skill about the business they opened after returning home. Financial and social capital gained abroad raised the chances for returning migrants to become entrepreneurs, mostly for small and medium-sized enterprises. The work experience during the migration period facilitated their positive re-adjustment in the home country.

### *4.1.1 New possibilities for employment*

Each of the interviewees has employed a certain number of individuals in their enterprise. Given the high unemployment rate in Shkodra, this fact becomes even more significant. For all of the interviewed businesses, the number of employed individuals has increased since the businesses' inception. Migrant entrepreneurs, in addition to utilising financial and social capital, have also contributed to reducing the relative unemployment figures in the region. In addition to the enterprises mentioned here, there are several other new enterprises set up by migrants. As employers, they try to save in labour costs by using the labour force of the country of origin (Kuptsch, Martin 2010, 122). Re-exporting [inward processing] industries are the type of returnee enterprises that contribute most to employment. In trade cooperation of the region of Shkodra with other countries, the footwear and textile inward processing is the most notable activity, mainly in trade exchanges with Italy. Some of these products are also sold in Shkodra and across Albania (Gjoni 2014). Comparing the production costs in the country of destination (Italy) with the country of origin (Albania), *Artan* relocated his enterprise from Italy to Shkodra, employing more than 130 individuals, mostly women. In recent years, the number of employed women from the region has risen, which is explained by the establishment of such enterprises, mainly in the secondary sector.

> ***Artan****: After 10 years in Italy, my Italian friend and I decided to open this re-exporting factory in Shkodra, so that we can take advantage of*

> *the lower labour costs here. The raw material comes from Italy, my employees sew the inside liner of motorcycle helmets and then the product is re-exported to Italy.*

The effect of the entrepreneurs in the labour market is also viewed from the perspective of boosting the demand for raw materials and services which they obtain locally. Entrepreneurs take their raw material from the region, so they have oriented some of the local production according to their needs for supply. This is the case of *Xhafer.* He considers himself lucky to have been able to work for a prestigious restaurant in England, which provided him with the knowledge to pursue his passion. *Xhafer* has learned a lot about how to cook and how to combine different spices and plants, whose value he previously didn't understand. The knowledge he has acquired has helped him appreciate local products and use them more frequently in his dishes. Most of the local products, whether cultivated or naturally grown, previously unknown or used very little, are now part of various dishes. The local residents have also started to use some of them. *Xhafer* also mentions that he has learned how to interact with clients and how to share duties and responsibilities with the employees.

> ***Xhafer****: I have worked in England for 14 years as an assistant chef. Cooking has always been my passion and I was eager to learn as much as possible from the experience of working in prestigious restaurants. Some of them had earned Michelin stars. I still explore new ideas of combining elements, which I find locally. We collect around 90% of the meat and vegetables from the local families here in the region.*

*Alban* shares the same approach to addressing the local community for the raw material. He has set up a dairy factory that produces cheese and other products from milk. It is located in the suburban area of the city, which in the Socialist period was well known for its high quality of dairy and meat products. After the fall of Communism, many informal buildings were built in this area, and the residents abandoned animal farming. The opening of these dairy factories fostered some residents to turn back to their old occupation.

> ***Alban****: I have established my enterprise in this area because it is known for the high-quality milk, of which I collect sometimes 5.000 to 6.000 litres a day. Our products are intended for the supermarkets and restaurants of the region.*

Albania has changed greatly since the fall of Communism. White considers the rapid growth of international migration, transnational networks and new international employment possibilities as the most significant factors shaping the lives of many citizens in the post-Communist countries (White 2016, 406). New opportunities during the transition period, which were previously non-existent, have expanded investment opportunities. In the case of returnee entrepreneurs, the social capital and the acquired knowledge have been very helpful in the re-adjustment process. The cheaper labour force in the origin country compared to the destination country motivates some migrants to return as employers, shifting production from the higher-wage countries to the lower-wage ones. This usually happens in collaboration with a partner from the destination country, creating thus networks of production or joint ventures. The investment of new ideas and the exploration of new experiences contribute to the success of the entrepreneur, and to the diversification of employment opportunities for the non-migrant community. Social remittances, however, have a major influence on the outcomes of economic remittances.

### *4.1.2 Social remittance transfer and transnational ties*

Within the migration-development nexus, social remittances are a very important and powerful component (King amd Lulle 2016). "As they send money, migrants simultaneously send immaterial goods that distinctively impact on social and cultural discourses, meanings and practices – in ways that span beyond any strictly economic effect" (Boccagni and Decimo 2013, 5). Following Levitt (1998), we define social remittances as "ideas, behaviours, identities and social capital that flow from receiving to sending countries communities" (Levitt 1998, 927). Return migration, whether temporary or permanent, and transnational movements are the main channels through which social capital is transferred to the origin country. This transfer of human and social capital may be affected through the permanent and temporary return, the investment in human capital in the origin country, and the transnational social activities during migration or after return (Black et. al. 2003). Returnees and transnational migrants transfer their knowledge and skills to the non-migrant community: friends, family, etc. While a significant inflow of money from abroad is a clear and distinctive fact, its impact on local development depends on the relational circuits into which it is embedded, and on the social value with which it is credited (Boccagni and Decimo 2013, 6). *Endi and Era* used to work in Italy in a pasta restaurant. They are a couple who is used to doing hard work in Italy and tries to keep the same pace in Albania, and they expect the same from their employees.

> ***Endi:*** *I have taught all the waiters we have. I chose the waiters' chief among the electricians that were working in the building. I preferred to teach him from scratch.*

Highly-skilled returnees have also had a major role in starting up new business ventures upon returning home (Lucas 2010). "When returnees do recognize themselves as bringing cultural change, one reason can be that the variety of new ideas and practices are already gaining popularity in the origin society for different reasons and they are simply contributing to these" (White 2016). *Elvis* has recently returned from Italy. He has studied pharmacy there and has opened a tea room in Shkodra. He explains that his knowledge in mixing different plants gave him the idea to open a bar with different kinds of tea. It is a small family-run business that attracts many young people, tourists and students alike, who find the low-cost bar very interesting. Most of the furnishings and utensils are recycled materials: old wooden chairs, jars, etc.

> ***Elvis:*** *Many of my friends and cousins are engaged in my activity: my cousin works in the bar, his sister washes the dishes, my aunt cooks the biscuits and cakes…They were very helpful, especially at the beginning, when I did not have enough money to employ someone…*

The benefits from an emigration experience are not limited only to the highly skilled. During their migration experience, migrants acquire certain "work habits" such as being punctual, working hard, saving money, being more careful with the disposal of litter, paying taxes regularly and asking for better standards of health and education; They thereby construct a transnational identity, which may be turned into a positive contribution if fostered from contextual factors (Davids and Van Houte 2008, 181). These values may be considered as an asset to development, especially if they have an impact on the surrounding social environment. Knowing friends and creating the right networks during migration has served as a pillar for many interviewees to set up their business. This social capital—a set of interpersonal relationships that facilitate individuals and groups in reaching their objectives—is considered as a source of benefits through extra family networks and identified as a key resource for the creation of small businesses (Portes 1998). The success of the enterprise depends on the relevance of the social capital, meaning how it can be used to get essential resources in order to save money, time and energy. As stated by Cassarino, additional resources that have to be taken in consideration when analysing the link between entrepreneurship and return are the family support and the networks of

acquaintances and friends in the country of origin (Cassarino 2014). Connections with the country of origin are equally important. The success of the enterprise in Albania, where informality remains significant, depends on setting up the "proper ties" and their type. *Adi* travels frequently between Albania, Italy and Kosovo, where he is working to expand his activity. The social capital he has is embedded in the transnational social field. Cross-border relations help him to succeed, but also affect social change.

> ***Adi:*** *I migrated in 2000 and returned in 2014. I did all kinds of jobs at the beginning, washing the dishes or cleaning a bar in Milan. It was known for its cocktails…I was lucky to meet two famous Milanese barmen, who taught me everything on cocktails. I still keep in touch with them, visit them often and they come to Albania too. I have tried to find the suitable people for managing the bars I have opened in Shkodra and Korca (two Albanian cities), which, honestly, is not an easy endeavour…*

Maintaining social capital is considered as very important by all the entrepreneurs. They frequently visit the previous country of emigration for two main purposes: first, for business matters such as purchasing equipment, raw material, collecting new ideas; and second, maintaining the relations as a plan B should they emigrate again.

## 5. Conclusion

Studies on return migration in Albania note remittances were used mainly for consumption during the first decade of transition (1990-2000) and for investments after 2000. Most literature focuses on financial remittances and does not address social remittances. While the role of financial remittances in the everyday lives of migrants' family and relatives living in Albania is often highlighted, the way in which the knowledge and skills are transferred to the non-migrant community remains unexplored. Financial remittances have had a notable impact on the development of Albania, and social remittances have been equally important. However, social remittances are difficult to trace. Even though difficult to identify, social remittances affect the outcomes of financial remittances. Although limited in number, returning migrants that have established their enterprises are key players that have contributed to development. Shifting from the consumption of these remittances to investing them is a qualitative step in Albanian contemporary migration. However, not all the returnees are successful; on the contrary, only a few of them are.

Nevertheless, this minority of returnees analysed in the paper—positive returnee entrepreneurs—can be actors of social and cultural change.

The degree of their impact is related to the degree of success, which, in turn, is dependent on a number of factors. A surprisingly strong relationship has been found between the migrant employment in the host country and their employment in Shkodra. All interviwees work in the same service as in the host country but now in the role of the employer. Financial and social capital gained abroad raised the chances for them to become entrepreneurs, mostly for small and medium enterprises. Migration experience, though often difficult, has given them the chance to accumulate a certain amount of money, which proved to be valuable in Shkodra and could be invested. At the same time, social capital has had the same role in the success of their enterprises. Some interviewees worked in bars, restaurants, the fishing industry, agriculture, and construction in the host countries, while others completed their studies there, mainly in Italy. They returned with knowledge, enriched experiences, a mindset of hard work, new friends and business partners and other kinds of connections that they still maintain. These are some, though not all, of the elements which have had their positive implication in their own success.

The entrepreneurial behaviour is one of the main channels through which return migration contributes positively to development. The returning migrants have advanced the entrepreneurial spirit during their migration period. All the enterprises are unique and reflect their creative spirit. These ideas are based on the work they used to do in the country of destination, and the innovation is reflected not only in the type of business, but also in the kind of materials they use, or the way they organise the work and communication with their employees. In this way, while working to achieve success for themselves, the entrepreneurs have also contributed to the local community in their country of origin. This contribution can be seen in several ways: the number of employees in these enterprises, the diversification of the labour market according to the entrepreneurs' supply needs, the transfer of knowledge and skills as reflected in the efforts to replicate the model by the local people. In spite of this success, the sustainability of return migration is put into question. The transnational behaviour and the preservation of social capital—not only for business purposes but also as an opportunity—in the case of re-emigration show that in the re-adjustment process, financial welfare is not all that counts.

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# BRICKS AND BOMBAST: U.S. PRESIDENTIAL ECONOMIC CHEERLEADING IN RESPONSE TO THE HOUSING MARKET

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**Abstract:** There is a long-standing discussion in the academic literature on whether presidential rhetoric mirrors or guides conditions in the sociopolitical environment. Scholars like Canes-Wrone (2001) and Edwards (2009) believe responsive presidential rhetoric that reflects what is happening in the sociopolitical environment is more likely to resonate with the public. This paper assesses whether presidents will heighten the usage of cheerleading rhetoric about the economy that uses a positive tone in response to changes in the housing market. The time series analyses of information available between 1963 to 2005 indicate presidents increase economic cheerleading in response to positive changes in the housing market.

***Key-words:*** *American presidency, rhetoric, political communication, housing market, interdisciplinary, macroeconomics, American politics*

## 1. Introduction

Presidents and Vice Presidents of the United States are the only political officials voted on by all eligible voters in the country, a fact which compels presidential administations to believe they have the unique position of being the primary leader and representative of the country (Patterson 1990). When presidents make public remarks, one can view them as comments whereby the president acts as the chief spokesperson of the country (Cohen and Nice 2003). Given the unique bully pulpit presidents have as the symbolic leader of the country, this has led scholars to question whether presidents have the capacity to persuade others through their statements (Neustadt 1990).

It appears though that presidents will often struggle with changing the perspective of others through rhetoric when the point of view expressed by the president is fundamentally different from the perspective held by others (Hill 1998; Wood 2009). Given this, there is the belief that presidents must strategically use the reality of conditions to advance their policy agenda (Canes-Wrone 2001; Edwards 2009). The question then becomes the

following: will presidential rhetoric reflect economic conditions to generate credibility with the public? The intention then is to examine whether presidential responsiveness to changes in the housing market lends support to the point of view that presidents are responsive leaders instead of direct leaders that speak about issues in a way that they personally prefer, like many politicians are apt to do (Fenno 1973; Wood 2009).

## 2. Research Background and Empirically Testable Predictions

### 2.1. Presidents and the Economy

Economic conditions are a fundamental part of how the public forms political evaluations (Campbell et al.,1960). The state of the economy is the core policy area used by the public to gauge performance of the president (Eshbaugh-Soha and Peake 2011), regardless of how much influence the president even has over the state of the economy. Indeed, the very electoral prospects of a president and the president's party could be predicated on public perceptions of economic performance (Erickson 1989).

Wood (2007) proposes that presidents behave strategically and will talk about the economy in a way that improves the electoral chances of the president and their party. He surmises that presidents will speak optimistically about the economy in efforts to improve public approval ratings and heighten support. The empirical analyses of Wood (2007) do find that an increase in optimistic rhetoric about the economy results in short-lived increases in real personal expenditures on durable goods. This is evidence that cheerleading about economic conditions can shape public perceptions and behavior about the economy. Nonetheless, the question is whether there are limits to this relationship, as presidents can run the risk of losing their credibility if they speak in overly positive tones about the economy when conditions suggest otherwise.

The point here is that there will be instances when the president must acknowledge and reinforce the concerns of the public on aspects pertaining to the economy, otherwise they can be accused of being tone deaf and out of touch with the reality of the sociopolitical environment. Speaking about the economy in ways that match actual conditions helps the president be perceived as an authentic figure, which has the potential to make the public more receptive and responsive to the president's policy appeals. As Canes-Wrone (2001) suggests, the public is going to be more supportive of the president when the president talks about things in a manner the public already agrees with. Reinforcing the viewpoint of the public validates how

the public thinks, which will make them more likely to listen to what the president has to say into the future. If presidents repeatedly try to tell the public what to think about the economy using a tone that does not match with contextual conditions at all, the public will tune the president out.

That is why presidents appear to tread carefully when deciding what tone to adopt when characterizing the economy given shifts in indicators seen as vital barometers of the overall health of the economy. The viability of the housing market is used as an indicator of whether the economy is in a growth or decline period (Case and Shiller 2003). A study of the market value of all residential assets in various countries illustrates a linkage between housing wealth and consumption values (Case, Quigley, and Shiller 2005). Vibrant housing markets are viewed as a sign of healthy economies, while dour housing markets are deemed a sign of weak economies. If a president repeatedly employs optimism in public remarks about the economy when the housing market is weak, they are potentially driving away the public with messaging that is incongruent with reality.

### 2.2. Research Hypotheses

Presidents are going to be responsive leaders in the face of prominent economic indicators like housing market conditions. When the housing market is doing well, the president will increasingly use optimistic language; this will be language that reflects actual conditions. When the housing market is doing poorly, presidential rhetoric will be less optimistic. The president's rhetoric on conditions pertaining to the housing market will match the tenor of the times. As a result, the following empirically testable research hypotheses are evaluated here:

> Research Hypothesis #1 – A prior increase in the number of housing units where construction has started significantly predicts an increase in presidential optimism about various aspects pertaining to the economy.
>
> Research Hypothesis #2 – A prior increase in the number of new housing units sold significantly predicts an increase in presidential optimism about various aspects pertaining to the economy.

These two hypotheses predict that signs of a healthy housing market (more construction on new homes and more homes sold) results in the United States president using cheerleading rhetoric about the economy. To see whether

there is merit to any of these predictions, a dataset must be built that can test these hypotheses statistically.

## 3. Dataset

For the measurement of presidential rhetoric about aspects pertaining to the economy, a time series (variable measured across time) indicator using Wood's (2007) collected information on economic tone is used. Wood (2007) extracted sentences from the Public Papers of the Presidents based on a keyword search with the computer programming language Perl. The Public Papers of the Presidents contains all public remarks and statements made by presidents in the modern era.

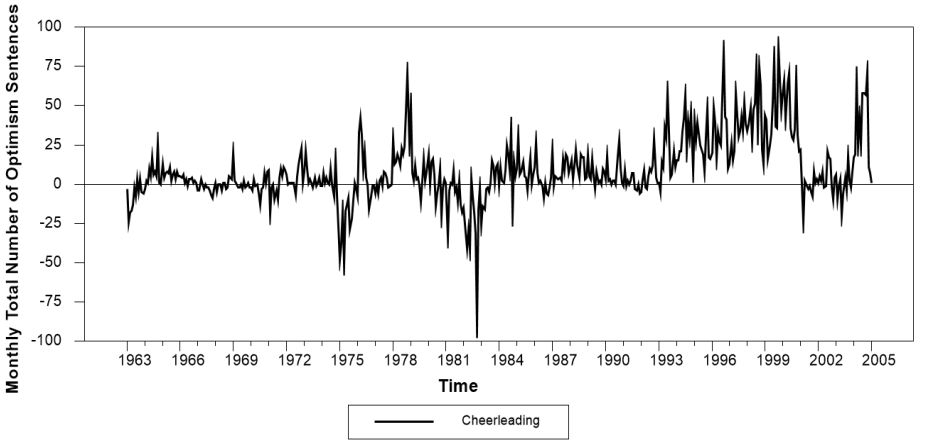
To gauge the tone from the president about the general dimension of the overall economy, every sentence in the Public Papers that uses the phrase 'the economy' and/or 'our economy' is analyzed by human coders. If a sentence uses words that suggests a positive tone about the general economy, it is considered an optimistic statement. If a sentence uses words that suggest a negative tone about the general economy, it is considered a pessimistic statement. The number of negative sentences each month is subtracted from the number of positive sentences each month to gauge the general tone about the economy. This information on the general tone about the economy measured by itself (meaning not including information on tone that specifically mentions unemployment, inflation, and/or the deficit) was used in prior research by Olds (2013) and Olds (2015) to represent presidential rhetorical optimism on the economy.

To capture more specific elements of the economy though, Wood (2007) also extracts and uses human coders for the keyword 'unemployment' to measure tone on the matter of unemployment, the keyword 'inflation' to measure tone on inflation, and the keyword 'deficit' to measure the tone on the deficit. As was done with the general economy, the number of negative sentences each month for each specific keyword is subtracted from the number of positive sentences each month for each specific keyword. Adding up the sentences on these four dimensions provides a measure for presidential cheerleading rhetoric:

> Presidential Cheerleading Rhetoric = Monthly tone on general economy + Monthly tone on unemployment + Monthly tone on inflation + Monthly tone on the deficit

The overall monthly sum of sentences along these four dimensions is the way in which optimism about the economy is measured. A graph of presidential cheerleading rhetoric on the economy for the period where data is available from Wood (2007) for the purposes of this study is provided below:

Figure 1: Monthly Time Series of Presidential Cheerleading Rhetoric




Source: Wood (2007)

Note that there are periods where the level of optimism is high above zero (suggesting a high level of optimism about the economy along the four dimensions) and periods where the level of optimism is well below zero (suggesting a high level of pessimism about the economy along the four dimensions). With this measure in place, it is necessary to have indicators of the housing market across time to see if changes in the housing market predict the level of presidential cheerleading about the economy.

Monthly totals on the number of housing starts comes from the United States Census Bureau (2018a). This measures the number of housing projects that begin in any given month, as represented by the total number of excavations started on the footings or foundation of a building. The total number of new houses sold during each month also comes from the United States Census Bureau (2018b) and tells us the number of new single-family homes sold based on information obtained by the Survey on Construction. Both time series are seasonally adjusted to account for seasonal patterns in home starts and new home sales, with the new home sales having a seasonally adjusted annual rate. With both measures of the housing market, it is possible

to assess the influence of housing conditions on presidential economic cheerleading rhetoric. Since the information for the housing variables and presidential economic cheerleading rhetoric is available each month between January 1963 and January 2005, that is the time period in which the study will analyze. Although some might consider the lack of information on presidential economic tone since January 2005 to be a limitation, note that the review of monthly dynamics for forty-two years provides more than enough information for this initial empirical analysis on the relationship between the housing market and presidential economic tone.

It is important to mention that the potential relationship between the housing market and presidential economic cheerleading rhetoric can be influenced by endogenous variables and exogenous variables. Endogenous variables are factors whose values might depend on other variables being studied within the system of variables. For instance, presidential approval might influence presidential cheerleading rhetoric, and vice-versa. As a result, the percentage of the country in each month studied that approves of the job the president is doing is included. The information derives from Wood's (2007) collection of information from the Gallup organization, which asks a nationally representative sample of Americans if they approve or disapprove of the job the president is doing.

Another endogenous measure is the misery index, which is the sum of the unemployment rate and the inflation rate. A high misery index is an indicator of stagflation, whereby there is great difficulty in finding employment and there is reduced purchasing power on any income earned (Grabia 2011). The danger with a high misery index is that policy efforts to address unemployment can exacerbate inflation, while policy efforts to address inflation can ultimately lead to reduced employment levels. The misery index is calculated from information provided by the Bureau of Labor Statistics to the Data Planet (2018) repository. A change in the misery index has the potential to shift both presidential rhetoric and the housing market; it is certainly possible that shifts in the housing market or rhetorical style can bring about shifts in the misery index as well. Accounting for these possibilities makes it necessary to include the monthly calculated sum of the unemployment and inflation rates as calculated by the monthly Bureau of Labor Statistics reports.

Exogenous variables are those that are not potentially dependent on shifts to the aforementioned variables, yet they do have the potential to alter values observed in these aforementioned variables. One can think of exogenous variables in a time series analysis of this nature as akin to control variables to clarify the extent of the relationship between the endogenous variables. There

are dichotomous dummy variable indicators (coded as a 0 for not being in the time period and 1 for being in the time period) accounting for recession periods, the start of military conflicts as identified by the Congressional Research Service (e.g. the first and second Iraq campaigns), the September 11th terrorist attacks, the passage of major economic initiatives proposed and promoted by the president, the month of presidential elections and congressisonal midterm elections, and unique presidential administrations (Kennedy, Johnson, Nixon, Ford, Carter, H.W. Bush, and Clinton). A dummy indicator for George W. Bush is not included, as this administration can be considered the reference level statistically; one presidential administration indicator must be left out of the model to avoid any estimation issues. All replication materials for this project are available at https://dataverse.harvard.edu/dataverse/christopherolds.

## 4. Research Methodology

The time series approach used to assess causal direction is vector autoregression, while the magnitude and polarity of relationships are evaluated with moving average representation. Vector autogression allows for each designated endogenous variable to be predicted by prior values of itself, as well as prior values of all the other endogenous variables. Put more simply, the goal is to see if past values of variables predict current values of variables. Including multiple lags (prior values) of each endogenous variable also accounts for the inertial qualities of variables, which means past values of one variable are going to heavily influence the values that follow for that same variable (Sims 1980).

In vector autoregession, Granger causality tests are performed to see if the prior values of a variable can predict the values of another variable in the endogenous variable system. With each hypothesis in this project, there are four endogenous variables in the system (misery index, presidential approval, presidential economic cheerleading rhetoric, and a housing market indicator). Any criticism that variables are left unaccounted for in the system should consider both that there are exogenous controls included, and that any variables omitted from the system are accounted for by prior values of the endogenous variables in the vector autoregression model (Eshbaugh-Soha and Peake 2011, 135).

For each of the two vector autoregression models analyzed, a series of Engle-Granger tests are performed at different lag lengths to see if the endogenous variables are cointegrated. Cointegrated variables share a common trend across time, and standard vector autoregression techniques

should not be performed if there is any inkling of cointegrated variables. The Engle-Granger test results presented in Table 1 indicate that neither vector autogression system has cointegrated variables, as the unit root tests on regression residuals in the two systems suggest the null hypothesis of no cointegration should not be rejected.

Vector autoregression is a helpful means to learn more about the potential causal relationship between variables but is not particularly useful in terms of assessing the polarity or magnitude of the relationship between variables. Because of the presence of so many lags in the vector autogression, any coefficient estimates are plagued by multicollinearity concerns. This makes moving average representation procedures necessary.

Table 1: Engle-Granger Cointegration Diagnostic Test Results

| Model | Engle-Granger Test A | Engle-Granger Test B | Engle-Granger Test C | Engle-Granger Test D | Engle-Granger Test E |
|---|---|---|---|---|---|
| Hypothesis #1 Housing Units Started Model | # of lags: 5 test statistic: -2.77249 critical value .01: -4.68391 critical value .05: -4.12158 critical value .10: -3.82765 | # of lags: 6 test statistic: -2.76547 critical value .01: -4.68398 critical value .05: -4.12162 critical value .10: -3.82769 | # of lags: 7 test statistic: -2.66696 critical value .01: -4.68405 critical value .05: -4.12166 critical value .10: -3.82772 | # of lags: 8 test statistic: -2.71127 critical value .01: -4.68412 critical value .05: -4.12171 critical value .10: -3.82776 | # of lags: 9 test statistic: -2.54841 critical value .01: -4.68419 critical value .05: -4.12175 critical value .10: -3.82779 |
| Hypothesis #2 Housing Units Sold Model | # of lags: 1 test statistic: -3.45775 critical value .01: -4.68364 critical value .05: -4.12140 critical value .10: -3.82752 | # of lags: 2 test statistic: -3.16364 critical value .01: -4.68370 critical value .05: -4.12145 critical value .10: -3.82756 | # of lags: 3 test statistic: -2.86077 critical value .01: -4.68377 critical value .05: -4.12149 critical value .10: -3.82759 | # of lags: 4 test statistic: -2.81743 critical value .01: -4.68384 critical value .05: -4.12153 critical value .10: -3.82762 | # of lags: 5 test statistic: -2.75976 critical value .01: -4.68391 critical value .05: -4.12158 critical value .10: -3.82765 |

Source: Original data analysis using WinRats Standard
Note: The null hypothesis is no cointegration present

With moving average representation, a simulated shock (change) is imposed on a single variable in the endogenous system. The purpose is to see how other variables react across time when there is an increase to a specific variable. When a specific variable shifts upward, do other variables increase or decrease in magnitude, and for how long does this increase or decrease

last? Moving average representation provides the answer. After a shock to a single variable, how other variables respond is made clear. In order to make sure there is a uniform interpretation regarding the size of change in variables when there is a shock introduced into the system, all the endogenous variables are standardized. That means the endogenous variables are rescaled to have a mean of 1 and a standard deviation of 0. Placing the endogenous variables on a common metric like this makes it easier to interpret how much of an effect changing a specific variable has on other variables in the system.

## 5. Research Results

The results of the analyses provide clear support for both Hypothesis #1 and Hypothesis #2, suggesting that for the time period studied, presidential administrations are strategically responsive to the housing market in the tone of their rhetoric about the economy. Prior values about housing conditions do predict current values of presidential cheerleading about the economy, and a positive increase in housing market indicators results in an increase in presidential cheerleading about the economy.

In terms of Hypothesis #1, it is important to note from the vector autoregression results reported in Table 2 on the next page that the only two variables in the endogenous system that predict presidential cheerleading rhetoric about the economy are prior values in new housing units started (p-value = .03) and prior levels of presidential economic cheerleading (p-value = .00). Presidential economic cheerleading rhetoric does not appear to be responsive to prior values of the misery index (p-value = .65) or prior values in presidential approval (p-value = .71).

Changes in the number of housing units started seems to influence the usage of presidential economic cheerleading rhetoric; this serves as evidence that presidents employ responsive leadership about the economy with changes in specific indicators. Housing units started is something that members of the public see. It is a tangible measure of the state of the economy, whereas the misery index is not something that is clearly seen and is more of an abstract concept about the economy. Housing being constructed is observable with people's own eyes, while the misery index is not necessarily information that is immediately observable and processed by the public. This comment is reinforced by the findings that prior housing units started predicts presidential approval (p-value = .01) and prior values of the misery index do not predict approval ratings (p-value = .23). So, if presidents were to alter their cheerleading rhetoric in ways that are not responsive to housing

units being sold, all presidents risk being perceived by the public as not credible. The vector autoregression results indicate presidents will respond to the recent levels in new housing units started.

Table 2: Vector Autogression Granger Tests Results for Hypothesis #1

| **Independent Variable** | **Dependent Variable** | **p-value (F-statistic)** |
|---|---|---|
| Misery Index ➔ | Misery Index | .00 (357.0578) |
| Presidential Approval ➔ | | .00 (3.2188) |
| New Housing Units Started ➔ | | .00 (3.2894) |
| Presidential Cheerleading | | .51 (0.9114) |
| | | |
| Misery Index | Presidential Approval | .23 (1.3237) |
| Presidential Approval ➔ | | .00 (251.8371) |
| New Housing Units Started ➔ | | .01 (2.5116) |
| Presidential Cheerleading | | .19 (1.4037) |
| | | |
| Misery Index ➔ | New Housing Units Started | .01 (2.7764) |
| Presidential Approval | | .89 (0.4550) |
| New Housing Units Started ➔ | | .00 (131.2485) |
| Presidential Cheerleading | | .57 (0.8387) |
| | | |
| Misery Index | Presidential Cheerleading | .65 (0.7518) |
| Presidential Approval | | .71 (0.6791) |
| New Housing Units Started ➔ | | .03 (2.1219) |
| Presidential Cheerleading ➔ | | .00 (11.4611) |

Source: Original data analysis using WinRats Standard

Note: Arrows in table represent Granger-causality from the block of coefficients for the independent variable to the dependent variable using a .10 level of significance. The p-value results are from F-tests for a null hypothesis of no Granger-causality. The system includes a deterministic constant, as well as exogenous control indicators for recessions, the start of military conflicts in Lebanon, Grenada, Iraq in 1990, Iraq in 2003, the September 11th terrorist attacks, presidential and congressional midterm elections, and unique presidential administrations. For the sake of space and clarity, the results for the exogenous controls are not included here. Each of the independent variables in the endogenous system include eight monthly lags to control for the inertia of variables. Lag length is selected by Akaike Information Criterion.

It is also important to note here that prior values in presidential cheerleading do not significantly predict current values in new housing units started (p-value = .57). The construction of new houses for the time period studied does not appear to be influenced by the level of presidential cheerleading about the economy. Instead, prior values of the misery index (p-value = .01) and prior values of new housing units started (p-value = .00) significantly predict the current value of new housing units started. It makes sense that changes in the misery index will influence the construction of new housing; the combined level of unemployment and inflation will determine whether there are potential buyers for homes and determines the price of materials/resources necessary in starting a new home.

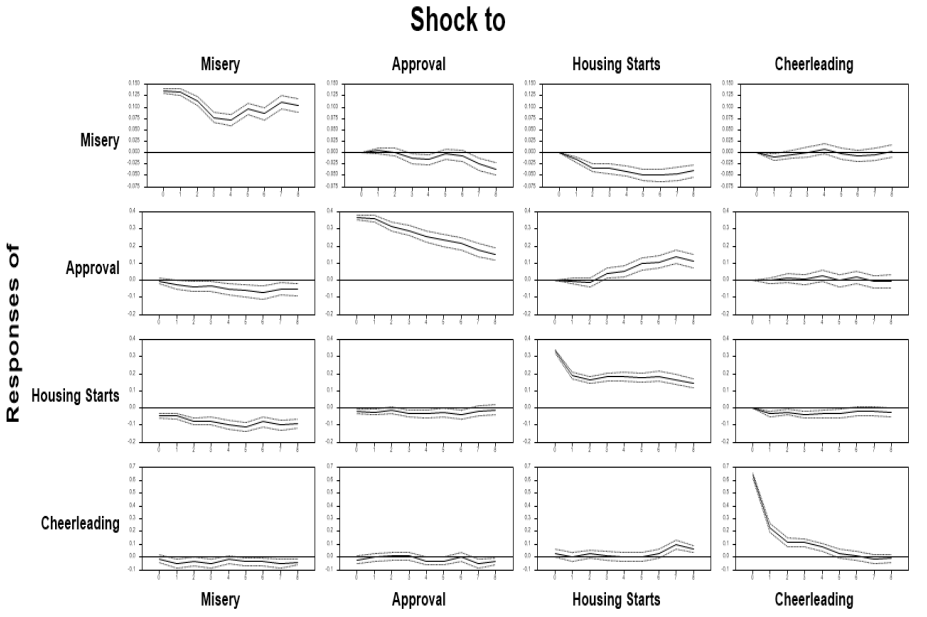
With respect to the magnitude and the polarity of the relationship between variables, the impulse responses of the moving average representation for Hypothesis #1 support the prediction that an increase in new housing construction results in an increase in presidential economic cheerleading rhetoric. Figure 2 provides the responses of variables in the endogenous system to simulated shocks for each of the four variables in the system. The 95% confidence intervals, represented by the dashed lines in each plot, are determined by Monte Carle integration and the fractile method (Sims and Zha 1999). The number of months following a positive shock to a variable is represented by the horizontal axis of each plot. The extent of positive or negative movement away from the standardized mean is represented by the vertical axis of each plot. The variable that is given a positive one standard deviation increase change (shock) is the same within each unique column in Figure 2 on the next page.

This means the plots along the first column represent the response variables have to a positive shock in the misery index, the plots along the second column represent the response variables have to a positive shock in presidential approval, the plots along the third column represent the response variables have to a positive shock in new housing units started, and the plots along the fourth column represent the response variables have to a positive shock in presidential economic cheerleading.

For the purposes of Hypothesis #1, it is essential that we look at column three, row four. This specific plot shows the response of presidential economic cheerleading rhetoric following a one standard deviation increase in new housing units started. Although it looks like the level of presidential economic cheerleading rhetoric does not significantly move away from the standardized mean of zero at first, presidential economic cheerleading rhetoric is clearly bounded away from zero six months after the shock. This indicates that it takes awhile before presidential rhetoric is clearly responsive

to new housing construction, but the level of cheerleading increases (is more positive in tone) six months after an increase in new housing units started has passed. There is a .10 standard deviation increase in the level of presidential economic cheerleading rhetoric.

Figure 2: Moving Average Representation Responses for Hypothesis #1




Source: Original data analysis using WinRats Standard
Note: Dashed lines represent the 95% confidence interval, while the solid line inside the confidence interval represents the estimated standard deviation change in a variable.

The results of the vector autoregression for Hypothesis #2 tell a similar tale as the results observed for the analysis of the endogenous system for Hypothesis #1. The results of the second vector autoregression are reported in Table 3 on the next page. Once again, prior change in the housing market predicts current levels of presidential economic cheerleading rhetoric. The number of new housing units sold Granger-causes presidential economic cheerleading (p-value = .00), and prior values of presidential economic cheerleading predicts current values of itself, suggesting the variable is inertial (p-value = .00). The president is again exhibiting responsive leadership by reacting to housing market conditions. The level of housing sold

predicts the tone the president adopts when discussing various aspects pertaining to the economy.

Table 3: Vector Autogression Granger Tests Results for Hypothesis #2

| Independent Variable | Dependent Variable | p-value (F-statistic) |
|---|---|---|
| Misery Index ➔ | Misery Index | .00 (1331.60) |
| Presidential Approval ➔ | | .01 (4.5617) |
| New Housing Units Sold ➔ | | .08 (2.5886) |
| Presidential Cheerleading | | .33 (1.0988) |
| | | |
| Misery Index | Presidential Approval | .19 (1.6584) |
| Presidential Approval ➔ | | .00 (1035.14) |
| New Housing Units Sold | | .72 (0.3320) |
| Presidential Cheerleading | | .88 (0.1330) |
| | | |
| Misery Index ➔ | New Housing Units Sold | .01 (4.7805) |
| Presidential Approval | | .82 (0.1993) |
| New Housing Units Sold ➔ | | .00 (511.4461) |
| Presidential Cheerleading | | .41 (0.8826) |
| | | |
| Misery Index | Presidential Cheerleading | .31 (1.1685) |
| Presidential Approval | | .67 (0.3968) |
| New Housing Units Sold ➔ | | .00 (6.0031) |
| Presidential Cheerleading ➔ | | .00 (49.5154) |

Source: Original data analysis using WinRats Standard

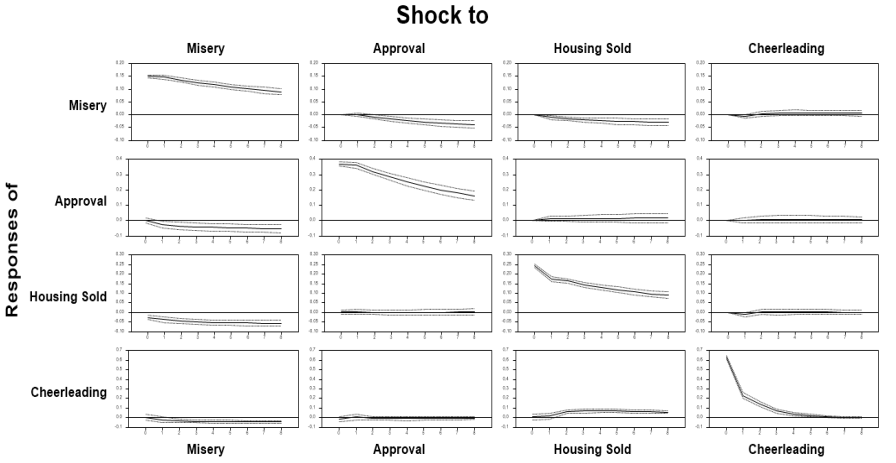
Note: Arrows in table represent Granger-causality from the block of coefficients for the independent variable to the dependent variable using a .10 level of significance. The p-value results are from F-tests for a null hypothesis of no Granger-causality. The system includes a deterministic constant, as well as exogenous control indicators for recessions, the start of military conflicts in Lebanon, Grenada, Iraq in 1990, Iraq in 2003, the September 11th terrorist attacks, presidential and congressional midterm elections, and unique presidential administrations. For the sake of space and clarity, the results for the exogenous controls are not included here. Each of the independent variables in the endogenous system include two monthly lags to control for the inertia of variables. Lag length is selected by Akaike Information Criterion.

Note again that presidential economic cheerleading rhetoric does not Granger-cause the level of new housing units sold (p-value = .41). Instead, the

level of housing units sold is significantly influenced by prior values of the misery index (p-value = .01) and prior values of itself, suggesting the variable also has inertial qualities (p-value = .00). The housing market conditions are not responding to recent changes in presidential rhetoric but are responsive to recent changes in the combined level of unemployment and inflation. It is logical that recent employment levels and prices will shape the current level of housing units that are sold.

One aspect of difference from Hypothesis #1 is that the housing market indicator does not predict presidential approval ratings. Prior values of new housing units sold does not Granger-cause current presidential approval (p-value = .72). It could be that the number of housing units sold is something that the public does not clearly see with their own eyes in the way that new housing construction is easily visible.

Figure 3: Moving Average Representation Responses for Hypothesis #2




Source: Original data analysis using WinRats Standard

Note: Dashed lines represent the 95% confidence interval, while the solid line inside the confidence interval represents the estimated standard deviation change in a variable.

The moving average representation analysis for Hypothesis #2 offers clear support for the prediction that an increase in new housing units sold increases presidential economic cheerleading. The plot in column three and row four in Figure 3 above shows the response of presidential rhetoric to a one standard deviation increase in the number of new housing units sold. By month two following the positive increase in new housing units sold,

presidential economic cheerleading rhetoric is clearly bounded away from the standardized mean of zero. At month two, there is a .10 standard deviation increase in the level of presidential economic cheerleading rhetoric that persists for several months afterward. Such a result means there is a positive relationship between new housing units sold and presidential economic cheerleading rhetoric. The president's tone about the economy is more positive when the number of new housing units sold increases.

## 6. Conclusion

The interest of this project was to see whether there is any credence to a proposal derived from Canes-Wrone (2001) and Edwards (2009) that responsive presidential rhetoric reflecting what has been happening in the sociopolitical environment is observable with empirically testable information contrasting economic tone and housing conditions. The results of the analyses indicate that presidents are responsive leaders, employing a more positive tone in economic rhetoric about the general state of the economy, the level of unemployment, the level of inflation, and the level of the deficit when indicators of the housing market improve. An increase in new housing units being constructed is a cue to the president that there is a willingness to take risk in the economic marketplace by going through the cost-intensive process of building new housing. More housing units being constructed tells presidents it is appropriate to speak about the economy in positive terms. The same goes for new housing units sold. If there is an increase in new housing purchased, that is a sign that there is a willingness to take risk in the economic marketplace by going through the process of acquiring property. More houses being sold tells the president that it would be credible to amplify the level of cheerleading rhetoric about the economy.

This project is by no means the definitive account on the matter of presidential rhetorical responsiveness to the housing market. For starters, while the paper focused on two very important indicators of the housing market, there are other indicators that future scholars should study, such as the national foreclosure rate and house price index by region of the country.

An additional consideration is that this analysis uses information about tone in the economy provided by Wood (2007), which has a dataset that ends in January 2005. While the level of resources needed are significant, scholars are encouraged to employ human coders to measure extracted sentences from the Public Papers of the Presidents to have information coded up to the present day. It will be very useful to learn about whether the results observed in this current analysis hold when accounting for a time period that includes

the Great Recession, President Obama's economic stimulus policies, and President Trump's consistently braggadocious approach to discussing the economy.

Another path includes the collection and analysis of housing indicator and elite rhetoric information from other countries. This can help us see whether the results observed in the U.S. are present in other contexts. Hopefully this project is merely an initial step and a conversation starter in the academic literature on the connection between housing conditions and presidential economic cheerleading rhetoric.

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# EXPECT THE UNEXPECTED: PROCESSING OF SENSORY INFORMATION IN THE ANTICIPATION OF PREDICTABLE AND UNPREDICTABLE THREATS

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***Abstract:*** *Anxiety is characterized by a sustained state of heightened vigilance due to uncertain danger, producing increased attention to a perceived threat in one's environment. To further examine this exploited the temporal resolution afforded by event-related potentials to investigate the impact of predictability of threat on early perceptual activity. We recruited 28 participants and utilized a within-subject design to examine hypervigilance in anticipation of shock, unpleasant picture and unpleasant sound during a task with unpredictable, predictable and no threat. We investigated if habituation to stimuli was present by asking the participants to rate unpleasantness and intensity of the stimuli before and after the experiment. We observed hypervigilance in the unpredictable threat of shock. Habituation was observed for the visual stimuli. The present study suggests that unpredictability enhances attentional engagement with neutral somatosensory stimuli when the threat is of the same modality, meaning we observed the presence of hypervigilance which is a characteristic of anxiety.*

***Key-words:*** *sensory processing, anxiety, unpredictable threats, EEG, N1*

## 1. Introduction

In recent years we have witnessed a proliferation of studies focusing on sensory processing of threats in hope to better understand the underlying mechanisms of anxiety when an individual goes into a state of hypervigilance (Baas et al. 2006; Cornwell et al. 2007; Driver and Noesselt 2008; Dunning, DelDonno and Hajcak 2013; Sharvit et al. 2016; Cecchetti et al. 2016; Dieterich, Endrass and Kathmann 2016; Domínguez-Borràs et al. 2017). It is still unclear how the information in this state is processed, specifically how different sensory modalities interact among themselves. Unwanted possibilites or threats from the environment can turn out to be predictable or unpredictable and how we react to them can be critical for our survival.

Unpredictable threats induce sustained anxiety, followed by vigilance, whereas imminent, predictble threat leads to phasic fear with selective attention (Grillon et al. 2004). Recent researches suggest that threatening context can sensitize reactivity to stimuli in all sensory modalities (Baas et al. 2006; Cornwell et al. 2007; Dunning, DelDonno and Hajcak 2013; Sharvit et al. 2016), however it remains unclear whether these neural mechanisms occur across different sensory modalities crossmodally, supramodally or intramodally (Driver and Noesselt 2008; Cecchetti et al. 2016; Dieterich, Endrass and Kathmann 2016; Domínguez-Borràs et al. 2017). This study will therefore focus on how exactly anxiety alters sensory information processing in three distinct sensory modalities while anticipating predictable and unpredictable threats.

By broadening our knowledge on how anticipating different types of threats with our senses occurs in a healthy population, we can better understand the deficits when anxiety becomes a disorder. For this reason, the present study was done on a healthy population in hope that the results will contribute to the development of better treatment for the underlying psychopathology in anxious patients.

To better understand the connection between anxiety, hypervigilance and sensory processing of threats, first one has to understand anxiety. Barlow (2000) described anxiety as a coherent cognitive-affective structure with its core in a sense of uncontrollability focused on possible future threats, danger, or other upcoming potentially negative events. We chose to focus on the component of possible future threats in hope to better understand anxiety as a whole. Unpredictable threat leads to generalized apprehension and hypervigilance (indicating readiness and preparation to deal with a potentially aversive event), whereas predictable threat elicits a "fight or flight" response that is produced by an identifiable threat. Grupe and Nitschke (2013) defined hypervigilance as a state of increased attention to a perceived threat in one's environment. Anxiety is tightly tied to hypervigilance, as it plays a critical role in maintaining it. It is supposed that threat-related arousal facilitates greater attention to a threat and decreases cognitions that would inhibit anxiety (Kimble et al. 2013).

Attention is the process by which the information that we find personally salient reaches our awareness and directs action (Todd and Manaligod 2017). It is the ability to restrict neural processing only to a relevant subset of stimuli while simultaneously excluding task-eligible stimuli from consideration. This usually takes place in the cerebral neocortex (Krauzlis et al. 2018). Anxiety shifts the attention away from a task-directed mechanism to a sensory-vigilance network, that is governed by the amygdala rather than the

prefrontal cortex (Bishop 2007; Bzdok et al. 2012). The amygdala is a part of the limbic system, a broad area of the forebrain located between the neocortex and hypothalamus that coordinates behavioural and physiological responses to threat—its subcomponents are responsible for processing and integrating environmental information, social information processing, and mounting appropriate attentional, vegetative, and motor responses (Bzdok et al. 2012). It is a highly conserved brain structure that is fundamental to detecting potential danger (Janak and Tye 2015). Hyperactivation of the amygdala can lead to symptoms of depression and anxiety (Yang et al. 2008; Swartz et al. 2015). On the other hand, the prefrontal cortex receives information about all sensory modalities and about the motivational and emotional state of the individual, and can be termed as the brain's "executive" (Niedermeyer 1998; Miller and Wallis 2013). It provides associations between cues and potential threats (Milad and Quirk 2012). Damage done to the prefrontal cortex can cause difficulties in sustaining attention, keeping "on task", and leads to irrational and impulsive behaviour (Miller and Wallis 2013).

### 1.1. Anxiety and sensory processing

The signals of different sensory modalities are processed in anatomically distinct brain areas, and the underlying mechanisms allow them to interact in order to build reliable representations of our environment and to guide our behaviour accordingly (Macaluso 2006). Several sensory-specific areas were identified, responding to stimuli in one or another sensory modality. However, it has been established that signals in different modalities can interact with one another, giving rise to multisensory integration, the study of how information from different sensory modalities can be integrated by the nervous system. Multisensory interactions can affect how we direct attention in space, such as improving our judgment of a visual stimulus by pairing it with a tactile or auditory stimulus (Macaluso 2006). It has been shown to enhance and speed up detection, localization, and reaction to biologically and emotionally significant events (Stein, Stanford and Rowland 2009). Neuroscience has identified multiple "multisensory" brain regions as convergence zones. In those regions neurons receive afferent inputs from several senses and combine them. This multisensory interplay that involves interactions between various sensory modalities can be termed as crossmodality, whereas sensory-specific processes, implying a single unified percept, can be termed as intramodality (Driver and Noesselt 2008).

The brain areas can also respond to specific information independently of the modality conveying the sensory input. This is a supramodal thesis,

however some authors refer to it as a "task-specific sensory independent" activity (Heimler, Striem-Amit and Amedi 2015), since these supramodal responses do not depend on a specific sensory modality (Cecchetti et al. 2016). An example of a supramodal network are the areas of the brain that process language and integrate visual, auditory, and tactile areas (Lindenberg and Scheef 2007).

It is important to note that authors have been investigating the question of whether stimulus representations from different modalities compete with one another for neural resources. Such competition among modalities would mean that there is evidence of shared crossmodal resources, whereas the lack of competition would point to independent, modality-specific attentional processing (Rapp and Hendel 2003). Research to date indicates that the attentional system can, in fact, be internally organized both into distinct modality specific and crossmodal mechanisms of attention (Rapp and Hendel 2003). Domínguez-Borràs and colleagues (2017) wished to establish whether it is the emotionally significant stimuli that enhance attention and perception when stimuli are simultaneously presented across different sensory modalities. The results showed that emotional modulation heightened sensory reactivity for somatosensory and auditory modality, with no apparent cost to sensory competition. However, visual responses showed a decrease, indicating a mechanism of sensory competition within the visual modality caused by the emotionally significant visual stimulus. This study confirmed and expanded the crossmodal model of attention, which considers that attentional mechanism modulates early modality-specific neural responses across the visual, auditory, and somatosensory cortices, indicating that these effects are controlled by supramodal networks for emotional regulation of perception and attention (networks for sensory response potentiation and sensory response inhibition).

### 1.2. Threats and behavioural response

When the individual is presented with a completely new stimulus, a dilemma is presented—should the stimulus be avoided or approached? If such stimuli are perceptually similar to those associated with danger in the past, they can be evaluated by the individual as potential threats, and the organism responds with defensive responses, such as avoidance or immobility (Grosso et al. 2018). The stress system, the response to and trigger of stressful stimuli, integrates a wide diversity of brain structures which enable us to detect events and interpret them as either real or potential threats, termed stressors (Dedovic et al. 2009). This perception of real or potential threats leads to interaction between mediating molecules with their corresponding receptors

in the periphery as well as in the brain and results in the stress response, which restores the body homeostasis and promotes adaptation (de Kloet, Joëls and Holsboer 2005; Joëls and Baram 2009). Identification of a stressor, either physical or psychological, leads to the activation of two major constituents of the stress system, the first being the sympathetic-adreno-medullar (SAM) axis, which secretes noradrenaline and norepinephrine, and the second the hypothalamus-pituitary-adrenal (HPA) axis, which secretes glucocorticoids. Once these axes are activated in response to a given threat, they will coordinate a response enabling both an appropriated strategy to deal with threats almost immediately and a homeostasis restoration (Godoy et al. 2018).

The first phase of the response to a potential threat (sympathetic adrenomedullar system—SAM) provides a rapid physiological adaptation resulting in short-lasting responses, such as alertness, vigilance, and appraisal of the situation, and enables the individual to deal with the threat in the initial phase (de Kloet et al. 2005; Joëls and Baram 2009).

When the stress system is not able to overcome the environmental, physiological, or emotional demand, it can become disrupted. This occurs when the demand is extremely strong or chronic and/or during development (Godoy et al. 2018). Chronic stressors in early life can result in permanent epigenetic, endocrine, neural, immune, and inflammatory changes, constituting a relevant risk factor for several neuropsychiatric diseases in adult life (Xiong and Zhang 2013; Berens, Jensen and Nelson 2017). Anxiety disorders tend to be more common in people who experience stress early in life (Fernandes and Osório 2015).

### 1.3. Predictable and unpredictable threats in anxiety

Prediction plays a crucial role in the quality of our life. It allows us to have representations of a particular future event upon which we can produce future-oriented actions, decisions, or behaviours, a network that can be termed anticipation (Pezzulo 2008). In this section I will present current research on the underlying anticipatory attentional mechanism and how neural mechanisms differ with regard to whether we can accurately predict threat in our environment or not.

According to Bidet-Caulet et al. (2012) extraction of informative cues from the surrounding environment occurs through a preparatory mechanism via the deployment of several anticipatory mechanisms—anticipation of imminent threats facilitates the processing of the incoming stimulus, improving the selection and execution of the behavioural response. However, depending on what is expected, different preparation mechanisms are

involved. Enhanced excitability in visual cortices was observed as a result of the attentional preparation mechanism before the stimulus onset, which induced quicker target detection and processing. Yet when participants expected a target requiring a motor response, the motor preparation mechanism was activated by enhancing excitability in the motor cortices before movement onset.

Neural mechanisms are quite different when we don't know what to expect. Dieterich et al. (2016) examined how attention is allocated under uncertainty about a potential threat. They found expectancy and covariation biases—participants overestimated the frequency of aversive stimuli under uncertainty, while showing a tendency for more negative subjective valences in response to aversive stimuli following uncertain cues. One of the key findings is that uncertainty-induced increase in early attention cannot be modulated by selective processing of neutral and aversive stimuli. This was not specific to visual stimulus processing, which would suggest a generally enhanced attentional response to uncertainly cued targets. These underlying attentional mechanisms produce an ongoing screening for threat in the environment and a continuous elaboration of neutral stimuli which deviate from expectation, indicating the presence of sustained attention for uncertainly cued targets.

### 1.4. Event-related potentials

Event-related Potentials (ERPs) are formed by averaging the EEG measurements of brain responses to repeated presentation of stimuli. They are especially useful for examining rapid processing of potentially threatening stimuli (LeDoux 2000). To further investigate the impact of threat on attention, the current study measured ERP responses elicited by non-painful electrical stimulation, pictures, and sounds during the NPU-threat task.

We can use the ERP waveform to visualize cognitive operations as they unfold during a trial. We can do this by observing the peaks and troughs of a stimulus-locked ERP. This leads us to ERP components, which can be defined by their polarity (positive or negative voltage), timing, scalp distribution, and sensitivity to task manipulations. A specific component can refer to the underlying cognitive processes and brain activity indexed by the potential (Woodman 2010).

The N1 is a negative deflection in the ERP waveform that peaks approximately 80–100 ms after the onset of the stimulus at frontocentral electrodes and indicates early perceptual processing of stimuli. It is enhanced when looking at unpleasant in comparison to pleasant and neutral pictures

(Cuthbert et al. 2000). The enhancement as a result of incoming information is an indicator of increased early vigilance and augmented sensory intake for somatosensory threats (Shackman et al. 2011). We therefore chose to focus on the N1 as an early indicator of attentional processing in the anticipation and predictability of threat in different sensory modalities and with it explore common neural mechanisms across senses.

Nelson et al. (2015) examined early activation of our defence system in anticipation of no, predictable, and unpredictable shock by observing the P3 and N1 components. Their findings show that the N1 was enhanced at frontocentral sites in anticipation of unpredictable shock and indicate that the increased N1 may serve as an important component in attention that primes early processing of sensory input when we anticipate possible (unpredictable) danger in our environment. P3 was attenuated, indicating that anticipation of threat in general engages later attention processing. It was one of the first studies done to use startle probe ERPs to demonstrate how the context of a potential threat elicits attentional engagement. They used the NPU-threat task, but included only one modality—the somatosensory.

In a later study Nelson and Hajcak (2017) examined attention in anticipation of threats in two different types of sensory processing—visual and somatosensory. They found that the startle reflex and the participant's ratings of their own feelings on a scale from 1 (not at all anxious) to 7 (extremely anxious) after each condition were greater in anticipation of both types of threat in comparison to no threat, which was further augmented for unpredictable compared to predictable threat. The N1 was, again, enhanced in anticipation of unpredictable threat in comparison to predictable and no threat in both shock and unpleasant picture trials, meaning that unpredictability enhanced attentional engagement in anticipation of threat in both modalities. However, the shocks elicited greater defensive motivation than unpleasant pictures, which indicates that more intense aversive stimuli are associated with increased effects of unpredictability on the startle reflex. Concerning the neural indicator of the attentional allocation (N1), one of the key findings was that when we compare shocks and unpleasant pictures, the type of threat does not play such an important role as does the potential for threat in general. It is important to note that this study was one of the first to use unpleasant pictures in the NPU-threat task.

Threat-elicited stress is also an important factor that governs our organism's response in a situation when threat is encountered. In an older study Shackman and colleagues (2011) observed early N1 component amplification in participants that were at random exposed to shocks while performing a simple task. This amplification indicates that threat related

stress (shocks at random) altered attention by amplifying early sensory processing of non-threatening stimuli due to vigilance for threat. At the same time, the later activity of P3 component was attenuated, indicating disrupted task-directed processing. This supports the notion that in anxious anticipation of an uncertain threat, our organism shifts the attention from the prefrontal cortex to the amygdala (Posner 1990; Bishop 2007; Bzdok et al. 2012).

In general, larger N1 amplitudes that occur in response to nonthreatening stimuli have been found in populations prone to high levels of anxiety, such as panic attacks (Wise et al. 2009), social anxiety (Felmingham et al. 2016), and PTSD (Zukerman et al. 2018). The N1 was specifically enhanced in those with PTSD in a study done by Zukerman et al. (2018) when participants were presented with the auditory novelty oddball paradigm to discriminate between target, novel, and standard tone. Such findings are especially indicative of hypervigilance of early automatic attention.

### 1.5. The aim of our study

The goal of our study was to investigate sensory processing during anticipation of predictable and unpredictable threats in three different modalities (auditory, visual, and tactile). Specifically, the emphasis was on the neutral stimuli presented after the cue and just before the threat to capture the neural mechanisms of anticipation. We wished to examine if the state of hypervigilance alters the attention to neutral stimuli in any of the three modalities. In addition, we wanted to establish if sensory processing is selectively influenced during anticipation of threat. Our main research question was how anticipation of threat affects sensory responses in the auditory, visual, and somatosensory modalities.

There has been a proliferation of studies on the connection between emotionally significant stimuli and sensory processing and attention. With predictable threats, the brain mechanisms work through several anticipatory mechanisms depending on what is expected (Bidet-Caulet et al. 2012), which is different from uncertainty-induced early attention, since the latter is not selectively influenced but generally enhanced to uncertainly cued targets. Stimulus that is presented after an uncertain cue (either neutral or aversive) tends to elicit an enhancement of early phasic and sustained attention, a neural indicator observable with the N1 component (Dieterich et al. 2016). These targets are processed through different sensory processing channels. Here, the results of previous studies have yielded inconsistent findings. Some argue that the sensory modality does not play a crucial differentiating role in the N1 enhancement, and that different types of aversive stimuli produce

comparable attentional engagement (Nelson and Hajcak 2017). Others say that due to sensory competition, the type of threat is an important factor in attentional allocation in the anticipation of unpredictable threat. Sensory effects that would be irrelevant in neutral conditions may become more salient in a threatening environment, only when these events do not compete within a sensory channel (Domínguez-Borràs et al. 2017). However, the amplification of the N1 component is an indicator of early attentional engagement (vigilance for threat) caused by the anticipation of unpredictable threat (Shackman et al. 2011; Nelson et al. 2015; Nelson and Hajcak 2017).

A review of literature on this subject has led us to formulate the following hypotheses:

*H1: When anticipating unpredictable threat, hypervigilance in all three sensory modalities can be observed as the enhancement of the N1 component.*

*H2: The enhancement of the N1 component in all three sensory modalities in anticipation of unpredictable aversive stimuli compared to predictable aversive stimuli or no aversive stimuli proves the presence of supramodality, suggesting a sensory-independent activity.*

*H3: The enhancement of the N1 component for neutral stimuli of the same sensory modality as the aversive stimuli proves the presence of intramodality, suggesting a sensory-dependent activity.*

## 2. Methodology

### 2.1. Participants

Subjects (7 male, 22 female) were undergraduate Psychology students at the Erasmus University of Rotterdam who obtained course credits in exchange for the participation. The subjects applied to participate in the study through a website of the Erasmus University of Rotterdam designed specifically for students to apply for all the ongoing research studies on the university. All participants provided written informed consent and the research protocol was approved by the Ethical Comittee of Erasmus University of Rotterdam. The social demographics of the sample are presented in Table 1. The data of one female participant, who was feeling anxious during the experiment and decided to withdraw, was excluded. The final number of participants was 28. Exclusion criteria were psychiatric or neurological disorders (for example epilepsy). The participants were informed about the conditions that would

distort the EEG data (hair gel, any kind of skin make-up …) and asked to avoid them on the day of the experiment.
The sample is rather small and not completely representative. It is not balanced in gender and it comprises only students. Due to these factors the results of the study cannot be generalized to the whole of population (see Discussion).

Table 1: Social demographics

| | | N | M | SD | Min | Max |
|---|---|---|---|---|---|---|
| Age | Female | 22 | 20.82 | 2.91 | 18 | 29 |
| | Male | 6 | 20.83 | 1.60 | 18 | 23 |
| Nationality | Dutch nationality and origin | 7 | | | | |
| | Dutch nationality and other descent | 2 | | | | |
| | Other nationality and origin | 19 | | | | |

Source: Author

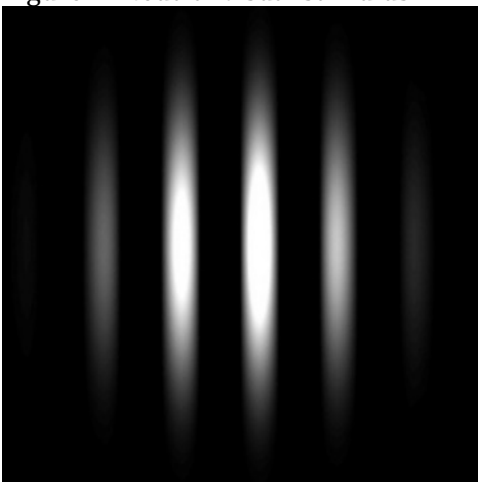
## 2.2. Apparatus and measures

### *2.2.1. Stimuli*

For the auditory neutral stimulus we used a beep tone with a fundamental frequency of 500 Hz, played at a volume of 70 dB. For auditory aversive stimulus we used the sound of a woman screaming at 90 dB. For somatosensory neutral and aversive stimulus we used electrical stimulation at individual pain threshold administered to the left lower arm muscle (M. Brachioradialis); the neutral and aversive stimulus differed in their duration as described below (see Procedure). Gabor patches were used for visual neutral stimulus as seen in Figure 1. For visual aversive stimulus we selected a picture from the International Affective Pictures System that presented a murdered man as seen in Figure 2 (IAPS; Lang et al. 2008). The visual stimuli and cues had a size of 500 x 500 pixels.

The stimuli were presented to the participants in an isolated room with a screen at a viewing distance of approximately 1 m. The screen size was 1024 x 768 pixels on a 22″ screen.

Figure 1: Neutral visual stimulus



Source: IAPS; Lang et al. 2008

Figure 2: Aversive visual stimulus

Source: IAPS; Lang et al. 2008

### *2.2.2. Questionnaires and Tests*

Before the experiment, the participants filled out the State-Trait Anxiety Inventory (Spielberger et al. 1983) (STAI) questionnaire and the Beck Depression Inventory-BDI (Beck 1961) on a computer. STAI was used to measure state anxiety (current state of anxiety) and trait anxiety (anxiety on a personal level). 20 items are allocated to each the state or trait anxiety, respectively. Responses for state anxiety assess feelings "at the moment. The responses for trait anxiety scales asses frequency of feelings. Higher scores

are positively correlated with higher levels of anxiety. The BDI measure is a 21-item scale with a good internal reliability and consistency. It also picks up anxiety states to some extent and focuses less on the somatic aspects of depression (Beck 1961).

The anxiety scores from the STAI questionnaire (Spielberger et al. 1983) were within the normal range in all cases (STAI-State: M = 38.6 vs 38.8 in standard population, SD = 10; STAI-Trait: M = 42.4 vs 40.4 in standard population, SD = 8.2).

We included one more written test after the experiment in which the subjects estimated the probability of a threat occurring after each cue. The purpose was to verify whether the subjects understood and followed the cues throughout the experiment.

### *2.2.3. EEG equipment*

Continuous EEG was recorded using an elastic cap with 64 sintered Ag/AgCl electrodes placed according to the international 10/20 system (Oostenveld and Praamstra 2001). An electrooculogram was recorded using four additional facial electrodes: two placed approximately 1 cm outside of the right and left eyes and two placed approximately 1 cm above and below the left eye. Data was recorded using the BioSemi ActiveTwo amplifier.

Signals were recorded with a low-pass filter of 134 Hz and were digitized with a sample rate of 512 Hz and 24-bit analog/digital conversion. BioSemi uses the common mode sense (CMS) and driven right-leg electrodes to create a feedback loop that replaces the conventional ground electrode. The CMS was used as an online reference.

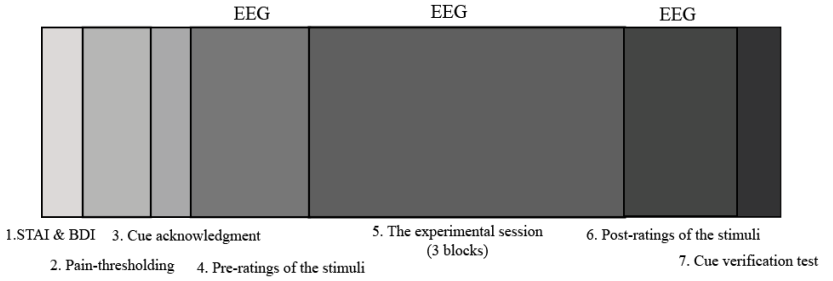
## 2.3. Procedure

Participants first read and signed the consent form and then completed the STAI and BDI questionnaires on the computer which took approximately 10 minutes. The next phase of the experiment took place in an isolated room where the EEG recording took place. When the EEG was set up, we proceeded with the pain thresholding procedure which lasted for approximately 10 minutes. Each individual's pain-threshold was measured to define the intensity of the somatosensory stimuli. We used an electric stimulus with a frequency of 50 Hz generated by a constant current stimulator (Digitimer DS7A, Digitimer LTD., Welwyn Garden City, UK). Prior to the pain thresholding procedure a scale from 0 to 10 was presented to a subject, 4 indicating "just noticeable pain". Participants received increasing levels of shock, with 2 series of increases of the electrical stimulation and 2 series of decreases, starting with 0 mA. The direction changed each time a subject

rated the shock as 4. The electrical current increased and decreased always by 1 mA. To determine the pain threshold we took the electric charges rated as 4, calculated the mean and added 30%. The electrical stimulation was always applied once for the duration of 2 ms. The mean shock intensity level across the entire sample was 2.34 mA (SD = 1.65) and the rating 5.72 (SD = 0.97).

After the pain thresholding procedure, the subjects were explicitly instructed about the predictive value of cues. Next, they had to rate neutral and aversive stimuli, measuring their intensity and unpleasantness. The question "How intense do you find this stimulus?" was displayed on the computer screen, after which the stimuli were presented one by one. The participants used a cursor to choose the perceived value on a digital scale. This procedure was repeated for the question "How unpleasant do you find this stimulus?". The overall range of the scale was from -50 on the left (the least intense or unpleasant) and 50 on the right (the most intense or unpleasant). They rated the stimuli before (Pre) and after (Post) the experimental session.

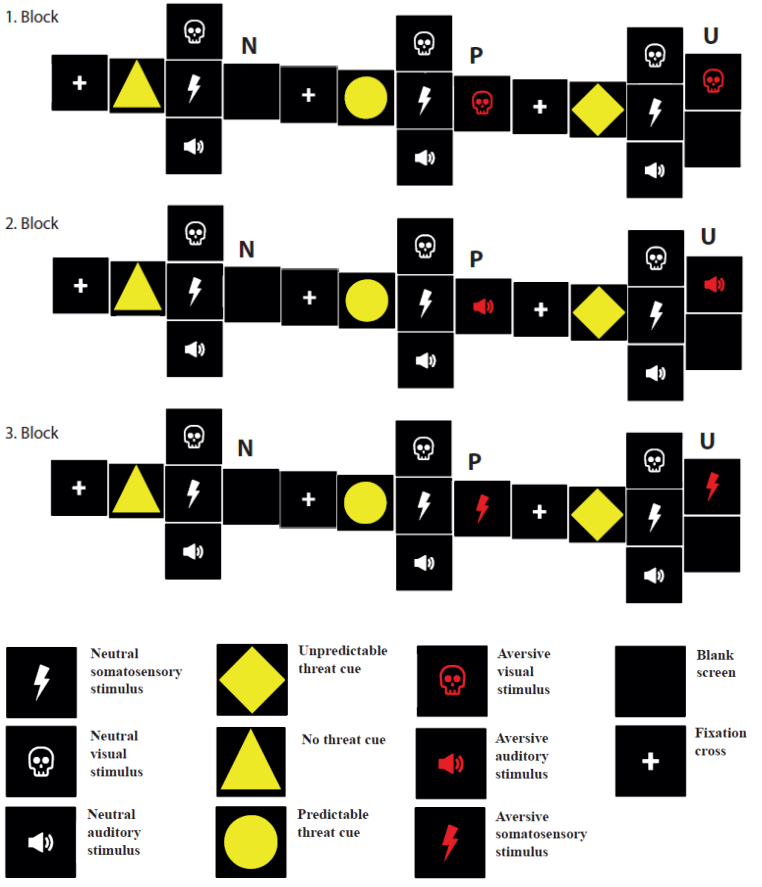
Figure 3: The procedure of the experiment—the length of each box presents the approximate duration of each step




Source: Author

For the three blocks we used the NPU-threat task (Schmitz and Grillon, 2012). We had one condition with three levels: 100% no threat, 100 % predictable threat, and unpredictable threat (50% threat, 50% no threat). Each block had a different threat modality—one with the aversive sound stimulus (woman screaming), the second with the aversive visual stimulus (Figure 2) and the third with the aversive somatosensory stimulus (long electric stimulation). Blocks were presented in one of the following orders (counterbalanced): 123, 231 or 312.

Figure 4: A schematic representation of an experimental trial



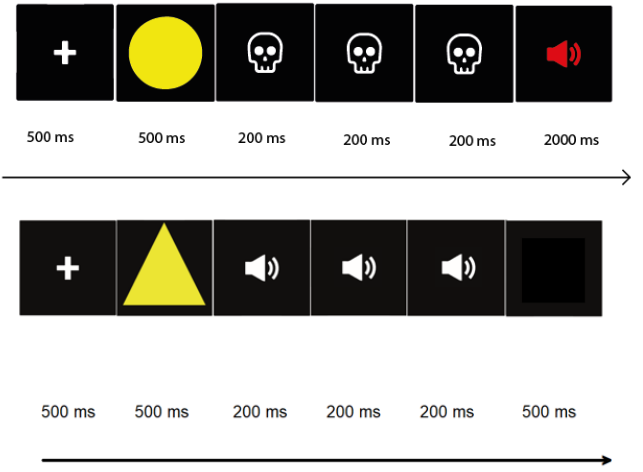

Source: Author

Figure 4 is a schematic representation of an experimental trial. The triangle, circle, and diamond represent the cues, the white images represent neutral stimuli, and the red images the aversive stimuli. In the no threat condition, no aversive stimulus was presented, leaving the participant with a blank screen. In the predictable threat condition, participants received one of the aversive stimuli, depending on the block. In the unpredictable threat condition, the participants got either a blank screen (no threat) or an aversive stimulus (threat).

Each NPU condition contained 20 trials, which amounted to 540 trials in total, i.e. 180 trials per block and 60 per conditions that were randomized. A trial began with a fixation cross followed by a cue in the form of a geometric

shape indicating the condition. Then the neutral stimulus was presented three times, followed by either no threat or predictable/unpredictable threat. The three blocks lasted for the duration of approximately 50 minutes.

Figure 5: An example of the no threat trial and the predictable threat trial




Source: Author

Cues indicating the NPU condition lasted for 500 ms. The neutral visual stimulus and the neutral auditory stimulus lasted for 200 ms and were repeated for 3 times, with variable inter-stimulus intervals (1000–2000 ms). The neutral somatosensory stimulus lasted for 2 ms. The aversive visual and auditory stimuli lasted for 2000 ms and the aversive somatosensory stimulus lasted for 10 times 2 ms on and 2 ms off (40 ms).

After the three blocks, participants rated the neutral and aversive stimuli in the same way as they did at the beginning. The final task of the entire experiment was a short cue verification test where participants were asked to write down the probability of a threat occurring after each cue. The whole experiment lasted for approximately 2 hours.

### 2.4. Data Analysis

We conducted the EEG analysis using the BrainVision Analyzer 2.1 software package (Brain Products GmbH, Munich, Germany).

Data was referenced offline to an averaged reference, band pass filtered (0.1 to 30 Hz), and corrected for eye movement artifacts using the Gratton method (Gratton, Coles and Donchin, 1983). Data were segmented with

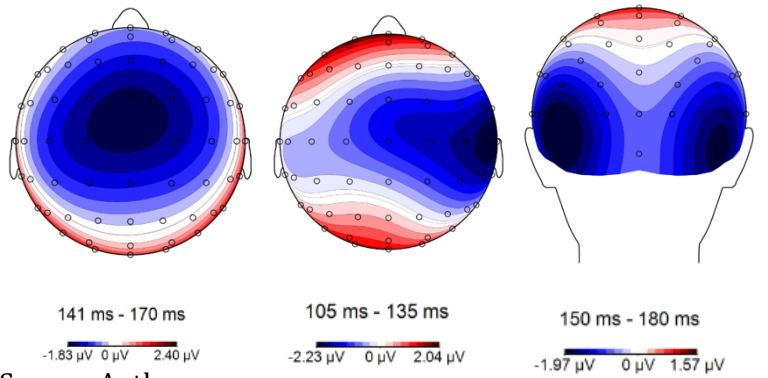
regard to neutral stimulus onset (–200 ms onset to 400 ms). Finally, an artifact correction (exclusion of epochs exceeding > 150 mV amplitude change or low activity) and baseline correction (200 ms) was applied.

We focused on the N1 component elicited by the neutral stimuli. The time windows and the topographic activity at that time can be seen in Figure 6. For the neutral auditory stimulus we extracted the mean amplitude in the time window of 140–160 ms scored over C1, CZ, and C2 on the basis of visual inspection (grand average across all auditory stimuli). For the neutral visual stimulus we extracted the mean amplitude in the time window of 150-180 ms. For the left hemisphere we pooled the PO7, P7, and P9 and for the right hemisphere P08, P8, and P10. For the neutral somatosensory stimulus we extracted the mean amplitude in the time window of 105–135 ms, scored over Cz, C2, and C4. Since the electrode for electrical stimulation was placed on the left arm, the selected electrodes were predominantly on the right hemisphere due to contralateral processing.

The values of mean amplitudes of neutral stimuli were then exported into the IBM SPSS Statistics, version 23 (2012). Separate grand averages were conducted for each type of threat (visual, auditory, somatosensory) and each condition (no threat, predictable threat, unpredictable threat).

The new clusters for N1 amplitudes were then analyzed using the repeated-measures ANOVA. Separate analyses were conducted for each modality. Significant interactions were followed up by post-hoc t tests with the criteria of $P < 0.05$.

Figure 6: Topographic maps of the N1 activity




Source: Author

The ratings of the stimuli were also exported into the IBM SPSS Statistics, version 23 (2012). The location of the cursor on the digital scale presented the value from -50 to 50. A 2 (aversive stimuli, neutral stimuli) x 3 (visual, auditory, somatosensory) and 2 (pre-experiment, post-experiment) x 2 (aversive stimuli, neutral stimuli) x 3 (visual, auditory, somatosensory) repeated measures ANOVAs were done on the intensity and unpleasantness ratings.

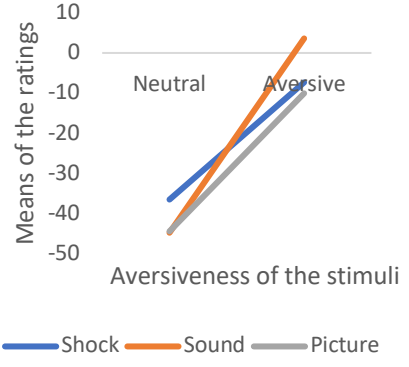
## 3. Results

### 3.1. Stimuli ratings

A 2 (neutral, aversive) x 3 (visual, auditory, somatosensory) repeated measures ANOVA on the intensity $F(2,54) = 11.55$, $p < .001$ and unpleasantness ratings $F(2,54) = 14.73$, $p < .001$ yielded a significant main effect of the aversive sound stimulus, indicating it was more unpleasant and intense than the aversive somatosensory and the aversive visual stimulus. This effect is presented in Figures 7 and 8.

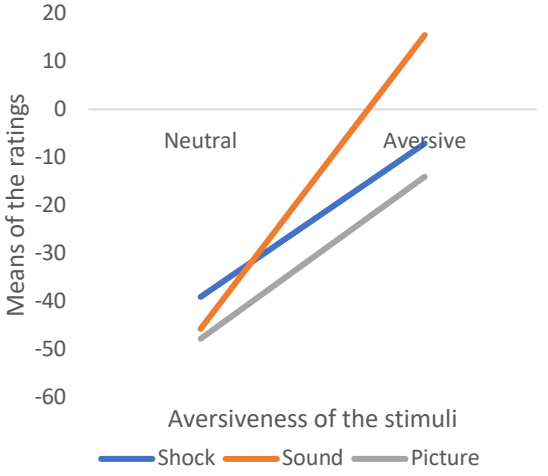
Another repeated measures ANOVA 2 (pre-experiment, post-experiment) x 2 (neutral, aversive) x 3 (visual, auditory, somatosensory) on stimuli ratings yielded significant results - the aversive visual stimulus was less unpleasant after the experiment and that the aversive auditory stimulus sounded more unpleasant after the experiment $F(2,54) = 4.45$, $p = .016$. The timeline of the ratings through the experiment can be seen in Figure 9.

Figure 7: Intensity ratings for neutral and aversive stimuli in all three modalities



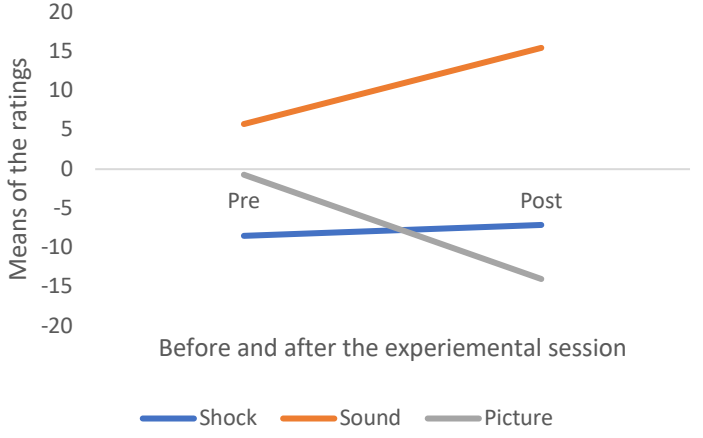

Source: Author

Figure 8: Unpleasantness ratings for neutral and aversive stimuli in all three modalities




Source: Author

Figure 9: Unpleasantness ratings before and after the three blocks




Source: Author

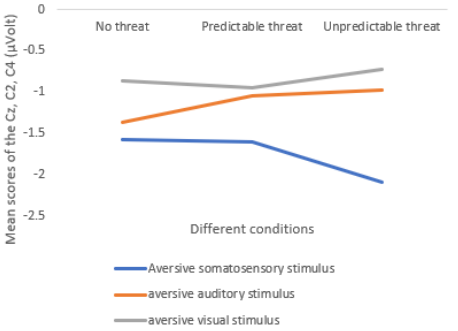
### 3.2. N1 amplitudes

A repeated measures ANOVA with three within-subject factors was performed to analyze the visual modality. A 2 (left hemisphere, right hemisphere) x 3 (unpredictable, predictable, no threat) x 3 (auditory, visual, or somatosensory threat) repeated measures ANOVA on the N1 amplitude yielded no significant main effect or interaction $F(4,108) = 1.52$, $p = .201$.

Another repeated measures ANOVA was performed with 2 within-subject factors in order to analyze the auditory modality. The 3 (unpredictable, predictable, no threat) x 3 (auditory, visual, or somatosensory threat) for the auditory modality repeated measures ANOVA did not yield any significant main effect or interaction $F(4,108) = 2.19$, $p = .074$. These results indicate that the N1 amplitude in the visual and auditory modality did not significantly differ between threat and neutral modality nor was there any interaction.

The 3 (unpredictable, predictable, no threat) x 3 (auditory, visual, or somatosensory threat) repeated measures ANOVA on the somatosensory modality yielded no significant main effect indicating that the N1 amplitude does not differ between the aversive and neutral modality. Nevertheless, there was a significant interaction between the aversive visual stimulus and the aversive somatosensory stimulus in the unpredictable condition $F(4,108) = 2.92$, $p = .024$ as seen in Figure 10. Because of this we performed a t-test to investigate the correlation. The correlation between the no threat condition and the unpredictable threat condition yielded significant results $t(27) = 2.39$, $p$ .024, as did the correlation between the no threat condition and the predictable threat $t(27) = 2.47$, $p$ .02.

Figure 10: Scores of the N1 component in neutral somatosensory stimulus presented with threat in all three modalities and with all three conditions




Source: Author

In Table 2 we can see the scores for the average of the three electrodes (Cz, C2, and C4) for the neutral somatosensory stimulus in different conditions (the no threat, predictable threat and unpredictable threat) and different threat modalities (auditory, visual and somatosensory). We can see that the unpredictable threat with somatosensory modality is the lowest. This is also well presented in Figure 13.

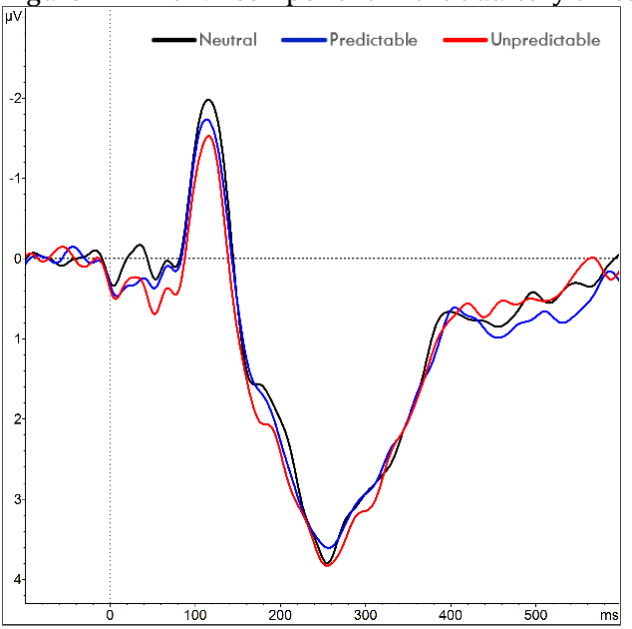
Table 2: descriptive statistics for the N1 component

| | Mean | Std. Deviation |
|---|---|---|
| No threat, somatosensory modality | -1.58 | 2.16 |
| No threat, auditory modality | -1.37 | 1.80 |
| No threat, visual modality | -.87 | 2.21 |
| Predictable threat, somatosensory modality | -1.61 | 1.84 |
| Predictable threat, auditory modality | -1.05 | 1.58 |
| Predictable threat, visual modality | -.95 | 1.53 |
| Unpredictable threat, somatosensory modality | -2.09 | 1.95 |
| Unpredictable threat, auditory modality | -.98 | 1.73 |
| Unpredictable threat, visual modality | -.72 | 1.92 |

Source: Author

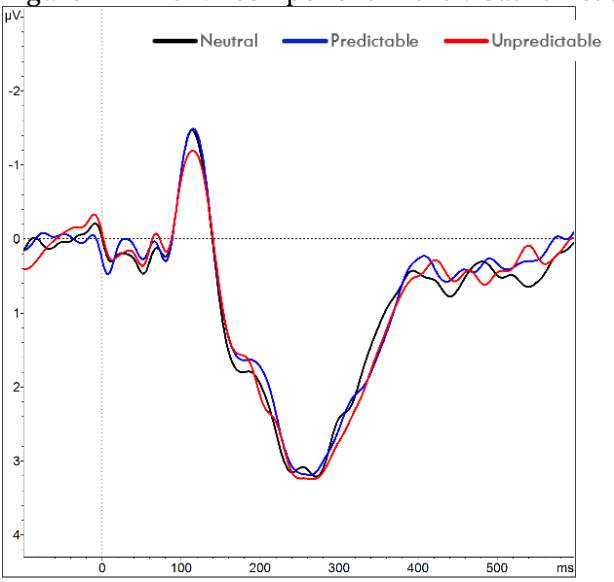
Figures below display N1 waveforms in all three conditions when the neutral somatosensory stimulus was presented in all three different threat modalities. The black waveform is the averaged and postprocessed ERP waveform of the N1 component in the safe condition, when no threat was presented. The blue waveform indicates the N1 component when the threat of either auditory, visual or somatosensory modality was predictable. The red waveform stands for the N1 component when the threat in all three modalities was unpredictable. The enhancement of the N1 component in the unpredictable condition compared to predictable and neutral conditions with the somatosensory threat is clearly visible.

Figure 11: The N1 component in the auditory threat



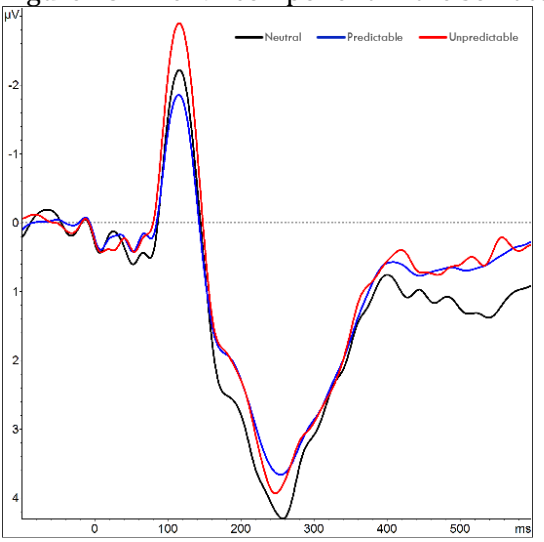

Source: Author

Figure 12: The N1 component in the visual threat




Source: Author

Figure 13: The N1 component in the somatosensory threat




Source: Author

## 4. Discussion

The aim of this study was to investigate the influence of threat anticipation on sensory responses in the visual, auditory, and somatosensory modalities. We analyzed the N1 component when neutral stimuli were presented and compared the amplitudes of different modalities in the no threat, predictable threat, and unpredictable threat conditions. We took ratings of the neutral and aversive stimuli before and after the three blocks of different threat modality to distinguish between different ranges of their intensity and unpleasantness and to observe whether habituation was present. We also checked for any possible correlation between the BDI, STAI results and the N1 enhancement to see if there was any interference with our results.

As we did not find the N1 enhancement in any of the three modalities in the unpredictable condition, we can dismiss our first hypothesis along with the second supramodal hypothesis. We did not find a significant effect on the N1 amplification in the visual modality while anticipating the unpredictable threat, indicating that hypervigilance did not occur. A possible explanation would be that in contrast to shock, which presents a source of actual physical threat, the aversive picture represents a mere visual threat (Lissek et al. 2007). It is noteworthy that some potential effects of habituation were present in the ratings of the stimuli, specifically that the aversive visual

stimulus appeared less unpleasant after the three blocks. Such habituation is commonly observed if emotional stimuli are repeated over successive trials (Plichta et al. 2014). There was also no significant effect on the N1 amplification in the auditory modality while anticipating the unpredictable threat, however the interaction between threat condition and the auditory modality was barely insignificant. This could be explained by a fairly small sample of 28 participants. A larger sample would provide more trials, which could lead to better signal-to-noise ratios (Dieterich et al. 2016). The stimuli ratings also show that the aversive auditory stimulus appeared more unpleasant and intense than the aversive somatosensory and visual stimuli, supporting the notion that significant results would be possible with a larger sample.

The results showed that only anticipating an unpredictable aversive somatosensory stimulus had a significant effect on sensory responses to neutral somatosensory stimuli. This is evident from the significant interaction between threat modality and condition. Shocks appear to be a more potent elicitor of vigilance mode (Shackman et al. 2011), a state in which N1 amplification can be observed due to the modulation of extrastriate cortex by the amygdala (Lim, Padmala and Pessoa 2009; Bzdok et al. 2013). This supports the notion of a heightened vigilance to somatosensory stimuli while anticipating a somatosensory threat. Because there was a significant effect on sensory responses to neutral stimuli in the condition where threat was of the same modality, we can partially confirm the third, intramodal hypothesis, concerning the notion of a sensory-specific brain organization according to function (Driver and Noesselt 2007). However, this should be considered with caution since source localization remains imperfect with EEG (Woodman 2010) and we are witnessing a growing body of literature on the emerging consensus that multisensory effects can influence traditional "sensory-specific" regions (Driver and Spence 2000; McDonald, Teder-Salejarvi, and Hillyard 2000; Vroomen and Gelder 2000; Frassinetti, Bolognini and Làdavas 2002; Lovelace, Stein and Wallace 2003; Macaluso 2006). Our results are somewhat inconsistent with previous findings. Domínguez-Borràs and colleagues (2017) posit that emotional processing is similar to attentional processes that modulate early modality-specific neural responses across the visual, auditory, and somatosensory cortices, thereby extending the crossmodal hypothesis. They observed functional connectivity as an increase in activity in areas responsible for auditory and somatosensory information processing that was concurrent with a decrease in areas responsible for visual information processing when participants were presented with fearful faces. The difference in our results could be attributed to spatial proximity between

stimuli in the study by Domínguez-Borràs (all the stimuli were near the subjects' head), which is known to influence crossmodal attention (Driver and Spence 2000). That was not the case in our study since none of our stimuli were close to the subjects' head. There is an increasing body of literature supporting brain connectivity, especially the functional connectivity, which postulates temporal dependency of neuronal activation patterns of anatomically separated brain regions (Lang et al. 2012). The fact that we did not observe crossmodal, functional connectivity does not exclude the latter, but rather highlights the limitations of our study, described below.

Our results showed no sensory competition between auditory, visual, and somatosensory modalities, which is why we were able to observe independent, modality-specific attentional processing, but not functional connectivity (Rapp and Hendel 2003). With this in mind we can, again, partially confirm our intramodal hypothesis. Domínguez-Borràs and colleagues (2017) observed a mechanism of sensory competition through a decrease in primary visual cortex due to concomitant processing of emotional faces and irrelevant visual stimuli, however these findings are inconsistent with our own. It should be noted that peripheral distractors and emotional faces appeared concurrently, whereas the stimuli presented in our study were nonconcurrent. A possible explanation would be the unequal aversiveness of our stimuli. Neutral conditions may appear more salient in a threatening environment (Domínguez-Borràs et al. 2017) and it could be that some of our aversive stimuli were not threatening enough. We cannot conclude, however, that different types of aversive stimuli produce comparable attentional engagement (Nelson and Hajcak 2017), due to the fact that we observed the N1 enhancement only in one sensory modality. Note that sensory competition implicates both the low-level sensory systems and the high-level fronto-sensorimotor networks. A study done by Huang et al. (2015), investigating the multisensory competition in the sensory pathway interactions with fronto-sensorimotor and default-mode network (DMN) regions, presented their participants simultaneously with visual and auditory targets. They found increased prestimulus activity in the prefrontal cortex and decreased prestimulus activity in the DMN, which enhanced visual dominance over auditory modality while exploiting the fMRI. The DMN is a concept that describes a resting state activity in which an individual is awake and alert, but not actively involved in an attention demanding or goal-directed task. The network includes precuneus/posterior cingulate cortex (PCC), medial prefrontal cortex (MPFC), and medial, lateral, and inferior parietal cortex (Lang et al. 2012). Huang et al. (2015) also observed that the ERPs and the divergence between the two conditions began to reach significance at 250

ms after the onset of the target. A possible explanation why we did not observe any sensory competition could therefore be our choice of method as the DMN network was more difficult to observe with the electrodes we chose. We also focused on the N1 component that peaks at approximately 100 ms.

As mentioned, a probable explanation for our results could also be our choice of electrodes. The fact that the right hemisphere is involved in vigilance and arousing states of anxiety is well documented (Posner 1990; Shackman et al. 2011). For example, in their study, Shackman et al. (2011), used a sophisticated method of determining the most stress-sensitive scalp regions where they chose a large cluster of electrodes centred along fronto-central part of the scalp and in the vicinity of the right mastoid. States of stress elicited by threat of shock and aversive images potentially activate the right lateral prefrontal cortex (Dalton et al. 2005; Dolcos 2006; Coan, Schaefer and Davidson 2006). A study done by Gilmore, Clementz, and Berg (2009) specifically investigated hemispheric laterality and ERP components. The results showed consistently stronger target-specific cortical activity in right temporal and parietal areas when the participants performed the auditory oddball paradigm binaurally and monaurally. The N1 component occurs only at 80–100 ms post stimulus, which is why it is very important to choose the right electrode (Woodman 2010). It could be that we did not get more significant results because our electrodes were mainly positioned around the central site of the scalp.

There are other factors that could interfere with our results. For example, the results of the BDI and STAI questionnaires showed that all our participants were in the normal range. There was no correlation between the results of the questionnaires and different scores of the N1 component between different conditions, indicating that the final average scores of the N1 component were not influenced by the symptoms of anxiety or depression. Furthermore, the participants took a test after the three blocks where they had to indicate the probability of a threat occurring after each cue. This test served as a verification whether they understood the meaning of cues throughout the experiment, which was important to differentiate between the three different conditions. The results indicated that the majority accurately followed cues throughout the experiment, while some did not. One participant indicated that the probability of a threat occurring after the predictable cue was 50%, four participants indicated the wrong probability of a threat occurring after the unpredictable cue, and six participants indicated the wrong probability of a threat occurring in the safe condition. These participants misunderstood the cues and it could be they were not

paying close attention to the experiment, which could have interfered with our results by diminishing the number of validate trials.

The present study has several limitations that should be taken into consideration. First, the generalizability of the results to other populations (such as children or clinical populations) is questionable due to the fact that the sample consisted of college undergraduates. Second, a small sample size, as was the case with our experiment, has low statistical power, whereas a larger sample could produce more significant results overall. Third, our study contained disproportionate aversiveness of different stimuli and threats therefore did not appear threatening on the same level. Another possible limitation could be the environment of the experiment—a laboratory, located at the university where participants study, an environment that is familiar to them and overall safe. Furthermore, the experiment was always led by two of our team, students as well, meaning that the participants had a sense of shared social identity. The results of the state anxiety were also within normal range. These factors could have attenuated the threats that consequently simply did not appear "threatening enough". Future studies should involve equally threatening stimuli and strive to use stimuli on a similar level of arousal, as it is well known that arousal drives attention potentially captured by ERP components (Cuthbert et al. 2000; Schupp et al. 2000; Schupp et al. 2007; Weinberg and Hajcak 2010). Considering the above, a more appropriate design for future studies would be to conduct them individually with separate modalities and use a homogenous category of stimuli within the same modality. This is especially plausible when the NPU-threat task is used to reduce the element of uncertainty during the predictable threat condition (Nelson et al. 2015). Nonetheless, our results add to the growing number of studies that use the NPU-threat task, indicating that measures of attention during the NPU-threat task have valuable psychometric properties.

## 5. Conclusions

Sensory processing in a hypervigilant state, i.e. when an individual experiences increased attention to a possible threat in the environment, is still not completely understood. The present study aimed to examine sensory processing during anticipation of predictable and unpredictable threats in the auditory, visual, and somatosensory modalities. We were interested in neural responses to neutral stimuli preceding threat. Furthermore, we focused on three modalities to see if the processes are selectively influenced in the course of anticipating threat. This study sought to contribute to a better

understanding of hypervigilance and thereby expand our knowledge of the anxious state.

The results showed the N1 enhancement in the unpredictable condition in the somatosensory modality. Sensory responses to neutral stimuli were enhanced when presented with the unpredictable threat of shock. These results imply that an individual goes into a hypervigilant state when there is a possibility of a somatosensory threat in the environment. We did not observe any presence of sensory competition, meaning that processes were not selectively influenced. As we detected an enhanced N1 in the neutral stimuli that was of the same modality as the aversive threat, we can confirm the intramodal hypothesis that suggests a sensory-dependent attentional activity.

This is somewhat inconsistent with previous findings. In recent years, crossmodality, along with functional connectivity of the brain, has been studied to a considerable degree. However, it is possible that with a larger sample we would also observe the N1 enhancement in the auditory modality, as the results were barely insignificant. Overall, future studies should focus on a larger sample and a modality-specific design of the study in combination with a homogenous category of stimuli, which could produce findings that would be more consistent with recent literature.

Nevertheless, the present study contributes to the growing body of literature on how unpredictable threat leads to a more sustained level of anxiety, producing a state of increased attention to stimuli that would otherwise appear non-threatening. A better understanding of the origin of unpredictability and its consequences could provide clues to identifying unpredictability as a causal factor in the development of anxiety.

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