

# LIMEN

Journal of the Hungarian Migration Research Institute

4 (2021/2)



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MIGRATION RESEARCH INSTITUTE

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**Migration Research Institute**

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## Social and Cognitive Domain Influence in Migration Networks

Ede Énekes – Imre Porkoláb

### Abstract

Drawing on the migration network theory, this article analyzes the cognitive process leading to the decision to migrate in the Mediterranean region. While migration scholars identified the importance of social networks and the role of the diaspora beforehand, to our knowledge, no qualitative study exists that articulates the cognitive and perceptual biases as a significant factor of illegal migration in the region.

We argue that the decision to migrate is mainly based upon the social influence and perceptual biases that shape the migrants' "pseudo-environment." This article uses the European Commission's study of the communication channels used by migrants in Italy as an illustrative case study. Referring to this study, we might raise the question of why do people accept the risk of being kidnapped, raped, or murdered without relevant information about the destination and their future? Is it under higher control, or is it a self-organizing and emergent pattern? Either way, we can argue that the decision to migrate is not an individual process but rather one that is influenced by smuggling groups, NGOs, home societies, and diaspora groups. Moreover, it is based on biased and distorted information. The cognition of potential migrants picks up these influential messages and creates a mental image – a pseudo-environment – that might or might not represent the real environment. However, the decision to migrate is a reaction based upon the illusion of this pseudo-environment regardless of whether it is a good representation of reality.

In conclusion, this article proposes an approach that emphasizes the social influencing and perceptual biases that inherently shape the dynamics of mass migration.

**Keywords:** illegal migration, cynefin, social influence, social diffusion, migration network

## Introduction

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This article aims to analyze the cognitive process that leads to the decision to migrate. According to the global sample of Gallup's World Poll between 2015 and 2017, 15% of the adult population of the world (more than 750 million people) is willing to migrate, while only 1.1% made actual preparations to do so.<sup>1</sup> In this study, the scope is limited to illegal mass migration to the European Union, where migrants enter the territory of the EU through illicit means.

This analysis focuses on the information that the decision is based upon, the source of the information, and the social influence that shapes the pseudo-environment of potential migrants. As decision making is a cognitive process, it is inherently subtle and could be subject to social influence, social contagion, and perceptual biases that altogether shape the perceived reality (pseudo-environment) of migrant populations. This is why we use the OODA loop model (Observe – Orient – Decide – Act), as a tool, to understand the decision making process, and also to illustrate how situational awareness can be improved in an individual's decision making as well as in the social context.

As Walter Lippmann argues, “the real environment is altogether too big, too complex, and too fleeting for direct acquaintance.”<sup>2</sup> Consequently, human cognition establishes oversimplified mental models of reality and people act upon them regardless of the accuracy of the representation. We also question whether the decision to migrate is based on a rational cost-benefit calculation or is a subject of social influence.

As a result, we suggest inquiring about the social and psychological factors that impel some to migrate, exploring the differences between the actual and perceived environments of potential migrants, and offering useful models to comprehend and mitigate illegal migration in the region. Overall, our focus is on the possible sources of the disparities between the actual and perceived environments, and how we might be able to shape it.

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<sup>1</sup> ESIPOVA ET AL 2016; ESIPOVA ET AL 2018.

<sup>2</sup> LIPPMANN 1922, p. 4.

## Literature in migration theory

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E. G. Ravenstein laid down the fundamentals of modern migration theories in his 1885 work titled *The Laws of Migration*.<sup>3</sup> This study identified certain factors like infrastructure, distance, the call of a labor market, and commerce that drove migration throughout the United Kingdom. Based on Ravenstein's widely admired findings, a set of scholars developed a theoretical background to migrate based on economic and demographic functions.<sup>4</sup>

Everett S. Lee's migration model of 1966 served as the basis for the widely applied *push-pull model* that explains the reasons to emigrate as a net effect of those factors and the obstacles between the country of origin and the country of destination.<sup>5</sup> However, this model only took into account the aggregate effects of the push and pull factors and failed to explain empirical observations.<sup>6</sup>

To overcome these shortcomings, neo-classical economic theories explored the dynamics of migrant flow based on economic drivers. These theories were built on two basic assumptions: (1) Individuals are rational actors who tend to maximize their well-being based on economic differences between origin and destination countries, and (2) the interplay between these actors tends to reach equilibrium in the marketplace.<sup>7</sup> These findings highlighted the interactions between the agents but did not explicitly address feedback mechanisms or systemic behavior. Also, the model was not able to explain empirically observed patterns.<sup>8</sup>

Based on the fundamental notion of Ravenstein's "Laws," Zipf proposed a model that is based on the positive correlation between migration and the difference between two economies, and the negative correlation between migration and the distance between the two geospatial locations.<sup>9</sup> This model became known as the '*basic gravity model of migration*'. As a refinement of the basic model, scholars introduced other variables to mitigate sampling biases and provide a better fit for the observed behavior.<sup>10</sup> This is called the '*augmented gravity model*', and it acknowledged diaspora as a major factor of migration.

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<sup>3</sup> RAVENSTEIN 1885.

<sup>4</sup> HARRIS – TODARO 1970; JEROME 1926; LEE 1966.

<sup>5</sup> LEE 1966.

<sup>6</sup> MIGALI ET AL 2018, p. 15.

<sup>7</sup> BORJAS 1989.

<sup>8</sup> MIGALI ET AL 2018, p. 15.

<sup>9</sup> ZIPF 1946.

<sup>10</sup> BODVARSSON 2013, p. 65.

Recognizing diaspora as a factor drove attention to *migration network theories*. There is nothing new in the notion of migration networks: early scholars explored the central role of social networks in migration in the 1920s.<sup>11</sup> In 1967, Tilly and Brown explored the “auspices” of migration referring to the social structure between sending and receiving communities. Later on, the term “migration chain” was introduced referring to the same phenomena.<sup>12</sup>

In 1989, Monica Boyd also claimed the importance of social networks in international migration.<sup>13</sup> As she highlighted, social networks are not just “conduits of information, and social and financial assistance” but more comprehensively shape the outcomes of migration systems.<sup>14</sup> This model explains the outcome of migration as a result of the interaction between individual decisions, socioeconomic factors, and social networks.<sup>15</sup>

Douglas S. Massey in 1990 described migration systems as self-perpetuating phenomena caused by the creation of social and economic structures that keep up a certain level of flow even though “the structural determinants that prompted it in the first place no longer exert their force.”<sup>16</sup> Massey highlights the self-reinforcing nature of migrant networks as every new migrant is a conduit for valuable information about migrating and also decreases the expected cost for possible migrants within the same network.<sup>17</sup>

In 2008, Sonja Haug bridged the gap between the individual decision model and the effect of the migration network by analyzing the “role of social networks in migration decision-making”.<sup>18</sup> Haug analyzed the role of social networks in terms of social capital, where a higher social capital in the destination country is positively related to a higher migration level.

It is worth noting that while these theories acknowledge the social influence on the macro level, the cognitive and social-psychological aspects – as well as the underlying decision-making context – have not yet been articulated. These theories are predominantly based on a rational choice model and do not articulate the dynamic nature of the context and the interaction between the social influence and individual decision-making process.

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<sup>11</sup> ZORBAUGH 1929; GAMIO 1930.

<sup>12</sup> MACDONALD – MACDONALD 1964; GRAVES – GRAVES 1974; TILLY 1979.

<sup>13</sup> BOYD 1989.

<sup>14</sup> Ibid p. 639.

<sup>15</sup> Ibid p. 642.

<sup>16</sup> MASSEY 1990, p. 8.

<sup>17</sup> MASSEY 1990, p. 17.

<sup>18</sup> HAUG 2008.



## Decision making in the complex domain

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In their recent book *The Heretics Guide to Management*, Culmsee and Awati warn us that just as children cling to Teddy Bears to soothe their fears of the unknown, so can we all cling to various business models, and plans to solve all our fears if we are just faithful to them.<sup>19</sup> Sometimes they are useful and give insight, but if we want to understand decision-making and sense-making in a complex context, we need to understand the nature of how they came about, what constraints are at play, and which areas of the decision-making process can be influenced. One of the issues that Valdis Krebs and Dave Snowden discuss at Cognitive Edge. Although they can identify the nature of the solution, they acknowledge that formal methods need to be further developed.<sup>20</sup>

One of these frameworks is the Cynefin model that Dave Snowden developed in order to make a distinction between different contexts.<sup>21</sup> The Cynefin framework encompasses five “domains” – Obvious, Complicated, Complex, Chaotic, and Disorder –, and illustrates the various differences in decision-making between each of these contexts (Figure 1).

In the *obvious domain*, our “standard operating procedures” or practices that have been proven before seem to work. Obvious can be applied in situations where the person has most of the information and thus follows the “sense-categorize-respond” sequence.

In the *complicated domain*, we encounter the “known unknowns”. This requires analysis or expertise on the side of the decision-maker to come up with the right answers. Complicated situations should be approached with a “sense-analyze-respond” decision-making framework.

The *complex domain* encourages experiments that are safe to fail. We believe that migration-related decisions mainly fall into this domain, where the “probe-sense-respond” decision-making framework is being used. In this context, the actions (experiments) taken by migrants and their personal opinions feed back into the decision-making loop. This dynamic interaction changes the situation in unpredictable ways.

In the *chaotic domain*, things are mostly unclear, and this is why action seems to be the first instinct. Action will initiate the “act-sense-respond” decision-making loop and focus people out of chaos, as they strive to find stability.

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<sup>19</sup> CLUMSEE – AWATI 2016.

<sup>20</sup> COGNITIVEEDGE 2010.

<sup>21</sup> SNOWDEN 2007.

Finally, in *disorder*, there is very little clarity, and it is hard to see when it should be applied. Anything that falls into this domain should move toward the previous four domains to be categorized and acted upon.

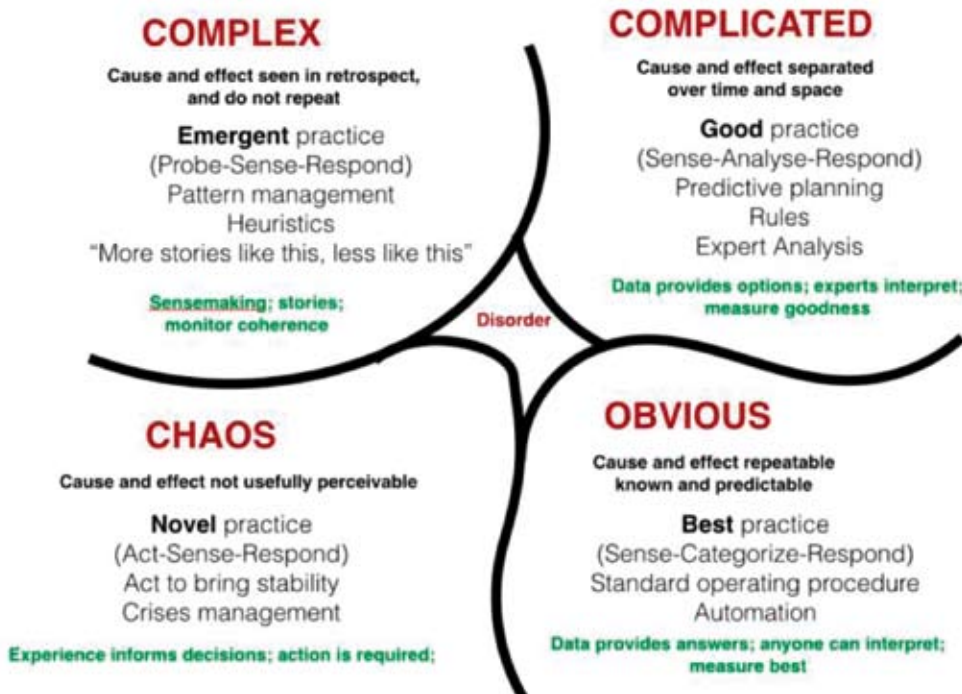


Figure 1 Cynefin framework<sup>22</sup>

Why is this framework important for understanding migrant networks? Cynefin is a good framework to categorize various domains and understand the differences between each domain's decision-making loops. But in and of itself, it is not enough, we need another procedural method that categorizes actions over time, and digs deeper into the decision-making process of individuals and social groups. We need a framework to understand how people make decisions in dynamic contexts when the situation changes almost constantly.

This is where USAF Colonel John Boyd's model is really useful. Boyd came up with a framework which has become an important concept in military, legal, and business strategy.<sup>23</sup> The OODA loop (observe-orient-decide-act) is a decision-making process that emphasizes speed, and the dynamic nature of how an

<sup>22</sup> Adapted from SNOWDEN 2007.

<sup>23</sup> BOYD 1976.

individual, or a group of individuals make decisions, as well as how it affects the context that they are operating in (Figure 2).

Boyd pointed out that whoever can run this cycle has the fastest response to unfolding events more effectively than an opponent. Thus, understanding the OODA loop can be useful not only to understand how migrants are making decisions in a complex domain, but it can also be a very effective tool, if we want to mitigate social influence or influential messaging.

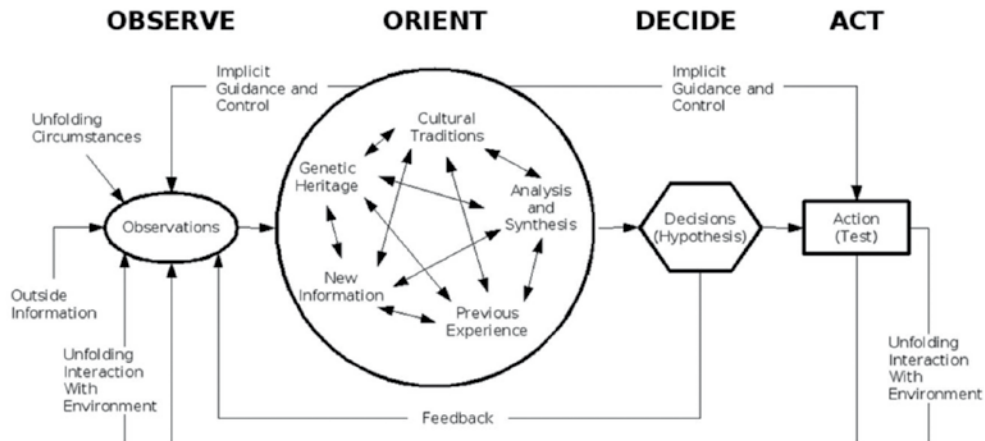


Figure 2 Boyd's OODA Loop framework<sup>24</sup>

The OODA loop is a smart framework for anyone making decisions in a complex domain or in a crisis. The various steps of the process help us to conceptualize what happens in people's minds when they respond adaptively to manage a crisis. The first step, "observe," is aimed at assessing ourselves. Part of the problem of making decisions is that we are an irremovable part of the equation, so our own cognitive filters and biases must be factored into the equation. Our brain can process roughly 200 bits of information per second. It means that if we are having a conversation with someone that requires about 90 bits out of the total of 200. One can imagine that in a complex situation, when about 20 million bits of information can reach our senses per second, our brain is filtering based on our focus. Our focus is highly affected by our beliefs and biases. So, the basic assumptions we make are based on decisions on heavily filtered information.

Moreover, we need to understand that our emotional reaction to the crisis has a great influence on how we decide and act. According to Boyd, our goal is to

<sup>24</sup> BOYD 2018.

survive on our own terms and improve our capacity for independent action. In a context, where people are fighting for limited resources (a migration crisis), our biological imperative creates purposeful behavior, and many decisions are driven by our limbic system in the brain, which mainly focuses on our evolutionary coding (finding and defending resources from competitors).

So, in the first step, we observe changes in our environment, encounter a perceived (or real) threat, and based on this subjective reality; we are trying to make sense of the rapidly changing context. In this second phase, we orient, and try to assess the current situation. The ‘observe’ and ‘orient’ phases together provide what in the military we call situational awareness. This situational awareness is based on the perception of data and elements of the environment, the comprehension of the meaning and importance of events, and the mental projection of possible future states of ongoing events.

Various factors influence our situational awareness on an everyday basis. Uncertainty and unpredictability are degrading our mental states; in these situations, we strive for stability. But as Heisenberg and Bohr point out, there is no single observation that can completely describe the system. Moreover, when the rate of change of the observed approaches the precision of which the observer is capable, the result will be erratic and uncertain behavior, pushing the system toward the chaotic domain. The problem is that our human capacity is limited, and we can easily overload our biological decision-making systems, especially if we are unaware of our limitations.

It is because of this kind of permanent uncertainty the OODA loop can be a really useful tool for understanding the decision-making of social groups. We can inflict uncertainty, or, just the opposite, calm people down just by providing contextual information to their cognitive processes.

The third step in the loop is decision, which in an unpredictable environment almost immediately results in taking action. Boyd suggests that we should be looking at our decisions as assumptions and has to carefully observe our actions, as those are indicators to see if we made the right choices. Thus, we are back at the beginning of the loop (observation) again. The cyclical nature of this model is what makes it so useful and effective.

We build internal mental models, and continuously refine them as we take everyday actions. Our expectations shape our focus and orientation, since we always get more of what we focus on. In VUCA<sup>25</sup> situations, when something unexpected is

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<sup>25</sup> Volatile, Uncertain, Complex, Ambiguous – The term has been originally developed by the US military, when the U.S. Army War College introduced the concept of VUCA to describe the more

happening, surprises will change our worldview, and our intention triggers. So, when we take action the next time, we hope that we will bring the external world more in line with our expectations.

This might be a huge mismatch in our case of a migrant crisis. The expectations are mainly based on myth and false propaganda, and when masses of people take action, they seem to get something very different than expected. This creates even more uncertainty and frustration and further distorts the decision-making and action-taking algorithms in human beings.

The other key factor in relation to the OODA loop, is speed, which can be best understood as the space between steps 3 and 4. This is where a strategy focusing on social aspects can win or lose. Inaction drains confidence fast. It makes us lose momentum. If we do not provide information and valid expectations to the migrant population, other perceptual biases will emerge, spread, and dominate their reality, and they might think decision-makers can't see the crisis, or worse, that they don't care. So, if we have clarified our intent to interfere with influential messaging and spread credible information throughout a network, we need to act.

The thing about a migrant crisis management is that we don't do it once. We go back to step one immediately and run the loop again and again until the crisis passes. Achieving the desired social response might be the only thing that will stop us from running the loop.

Learning about the possibilities offered by the OODA loop, and understanding its implications is really worthwhile. But the hard part is implementing it in real life situations, when we are dancing on the thin line between the complex and chaotic domains and mustering enough courage to make the necessary decisions and act when the pressure is on. In asymmetric conflicts, where there are a myriad of key stakeholders and a very dynamic environment, constant innovation of our methods is absolutely necessary. These systemic innovations can have a great influence on both governmental and non-governmental decision-makers.<sup>26</sup>

To have a better pulse on making these very complex decisions, we dig deeper into social structure and social influence theory.

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volatile, uncertain, complex and ambiguous multilateral world perceived as resulting from the end of the Cold War.

<sup>26</sup> PORKOLAB 2006; PORKOLAB 2014; PORKOLAB 2016; PORKOLAB 2017.

## Social structure and social influence

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According to the network approach, the social structure provides a contextual background for the decision to migrate. Social network theory holds that the behavior of individual actors is affected by the social networks in which they are embedded, and we cannot analyze their actions independently of the structure of those networks.

In a social network, actors are interdependent rather than independent, and their positions in the social structure determine their beliefs, norms, and behavior rather than pure rational choice.<sup>27</sup> “Even their identities are largely determined by their location in the social structure.”<sup>28</sup> Networks, in fact, are constituted by the stories (and the related symbols and norms) that they tell about themselves.<sup>29</sup> Culture and norms also play an important role by facilitating the contextual background for the symbols. Norms are the shared and accepted ideas that guide how actors interact with one another.

Sean Everton synthesized the underlying assumptions of social network theories as follows:

- Actors and their related actions are interdependent, rather than independent, with other actors.
- Ties between actors are conduits for the transfer or flow of various types of material and/or nonmaterial goods or resources (e.g., funds, supplies, information, trust, enmity).
- Social structures are seen in terms of enduring patterns of ties between actors (i.e., social networks).
- Repeated interactions between actors give rise to social formations that take on a life of their own, follow their own logic, and cannot be reduced to their constituent parts even though they remain dependent on those parts.
- An actor’s position in the social structure (i.e., its structural location) impacts its beliefs, norms, and observed behavior.
- Social networks are dynamic entities that change as actors, subgroups, and ties between actors enter, leave, or are removed from the network.<sup>30</sup>

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<sup>27</sup> EVERTON 2012, pp. 15–16.

<sup>28</sup> CUNNINGHAM ET AL 2016, p 15.

<sup>29</sup> WHITE 2008; PACHUCKI AND BREIGER 2010; FUHSE 2015.

<sup>30</sup> EVERTON 2012, p 15–16.

Milgram's Obedience to Authority experiments, Zimbardo's Stanford Prison experiment, and Sherif's Robbers' Cave experiment demonstrate the compelling power of accepted norms and the related group identity.<sup>31</sup> Mark Granovetter also notes that the greater a network's density, the easier it is to enforce the norms of that network.<sup>32</sup> Thus, with greater density and cohesion, the probability increases for effective information sharing, monitoring, and mobilizing.

For instance, the coercive power of social structure and norms in Nigerian mafia-type organizations is prevalent. Nigerian criminal groups like Black Ax, MAPHITE, and Vikings apply secret ritual affiliation ceremonies where candidates drink a drug-based beverage mixed with blood, while heavy beatings and other forms of violence are also integral parts of the ceremony.<sup>33</sup> The rituals emphasize values like obedience and loyalty and enhance the role of violence in the internal and external lives of the social network.

In some cases, illegal migrants also go through similar rituals, where they swear loyalty to the smuggling organization.<sup>34</sup> The oath, as they swear it in, is a behavioral compass, an unwritten code of conduct. It is highly monitored and enforced within dense and cohesive cells. These rituals have lasting socio-psychological effects that impact the perception of the affiliates and the victims due to their transformed pseudo-environment.

Several studies in neo-behaviorism suggest that changing small habits in small teams can have a long-lasting effect on the culture of the teams. The perceived social norms heavily influence the behavior of the actors and push people to act according to the interests of the group rather than acting out of pure self-interest. The social structure in which actors are embedded constrains and offers them opportunities as well as affects their behaviors more than pure rational choice models typically suggest.<sup>35</sup>

## **Influence and diffusion in migration networks**

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Based on what we have assessed so far, influence and diffusion in social networks have multiple aspects. Out of these, we will be focusing on three main aspects,

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<sup>31</sup> MILGRAM 1963; SHERIF 1988; ZIMBARDO ET AL 1971.

<sup>32</sup> GRANOVETTER 2005, p. 15.

<sup>33</sup> MINISTRO DELL'INTERNO [MINISTRY OF INTERIOR, ITALY] 2018.

<sup>34</sup> UNITED NATIONS OFFICE ON DRUGS AND CRIMES 2015.

<sup>35</sup> GRANOVETTER 1973; CUNNINGHAM ET AL 2016, p. 15.

which have the greatest potential to create a perception change in a larger social group. These are social influence and contagion, diffusion, and perceptual biases.

In their article on social contagion theory, Christakis and Fowler argue that actors can spread ideas, norms, and emotions across the social network up to three degrees (e.g., a friend of a friend of a friend).<sup>36</sup> Even a complex phenomenon like obesity can travel across the social structure through various ties. An actor's beliefs concerning obesity can influence not just his friends, but his friends' friends, and the friends of his friends' friends. The authors referred to this phenomenon as the "three degrees of influence."<sup>37</sup> (Figure 3)

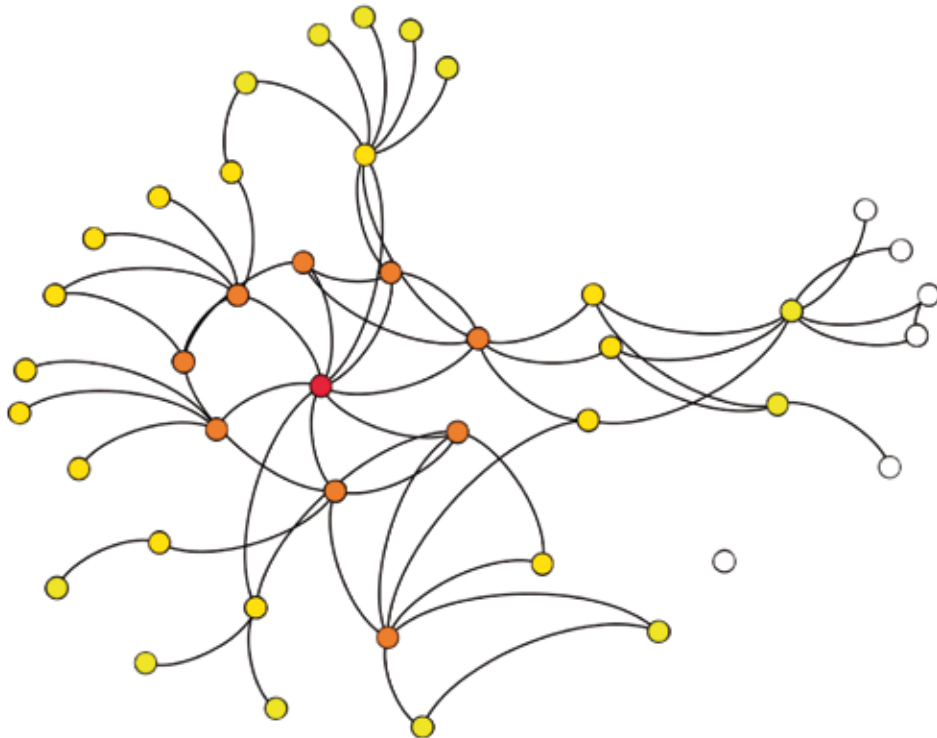


Figure 3 Spread of Ideas and Norms in a Social Network

Moreover, the actor is also influenced by every other actor within the social structure up to three degrees. Christakis and Fowler discovered that the strongest effect occurred through reciprocal ties where social distance is a major factor, more so than geographical distance. Nevertheless, crosscutting ties push and pull actors in different directions, and the net effect of these ties determines the actual behavior.<sup>38</sup>

<sup>36</sup> CHRISTAKIS – FOWLER 2007.

<sup>37</sup> CHRISTAKIS – FOWLER 2013.

<sup>38</sup> EVERTON – PFAFF 2021.



Social diffusion theory refers to the spreading of new ideas, beliefs, behaviors, and technologies throughout a social network. According to social scientists, social diffusion mostly happens when exogenous information and social reinforcement are at play together.<sup>39</sup> Another important characteristic is how new ideas and norms spread across the social structure. Everton and Pfaff define social diffusion as “the outward movement of an innovation (or cultural trait) from one source to another.”<sup>40</sup> The dynamics of spreading new norms or ideas are based on the notion that social actors assess their choices in light of the norms and attitudes of other actors.<sup>41</sup> The pattern of adopting new ideas follows a normal (Gaussian) distribution when the number of adopters plotted over time results in a bell-shaped curve. (Figure 4)

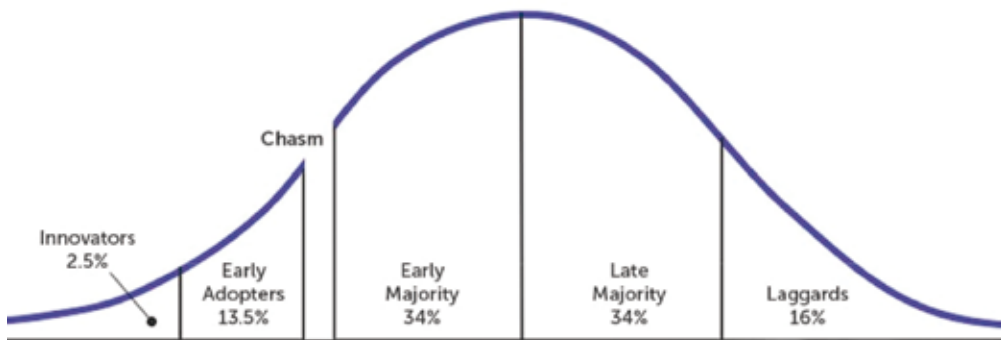


Figure 4 Number of adopters by time<sup>42</sup>

Early scholars of social diffusion differentiated five categories referring to the adoption of an innovation: (1) innovators, (2) early adopters, (3) early majority, (4) late majority, and (5) laggards.<sup>43</sup> An interesting notion is that when the proportion of adopters reaches a critical mass somewhere between 10 and 20 percent, the diffusion turns into a self-reinforcing mechanism that is very difficult to reverse.<sup>44</sup> Another interesting aspect of this theory is that there is a huge gap between early adopters and the early majority. To prevent a wide-scale social movement and related humanitarian crises, we should interfere with the spread of influential messages before they reach critical mass. This can be seen as a reverse implementation of the marketing and sales theory referred to as “Crossing the Chasm” by Geoffrey

<sup>39</sup> GOULD 1991; HEDSTRÖM 1994; YOUNG 2009.

<sup>40</sup> EVERTON – PFAFF 2021, p. 1.

<sup>41</sup> Ibid, 2.

<sup>42</sup> Source: MOORE 1999.

<sup>43</sup> RYAN – GROSS 1950, p. 49.

<sup>44</sup> EVERTON – PFAFF 2021, p. 6.

A. Moore.<sup>45</sup> The theory argues that marketers should focus on one group of customers at a time and each group can be considered as a prerequisite to the next group. Moore claims that there is a gap (chasm) between early adopters and the early majority and crossing this gap is a crucial part of a successful marketing strategy. As a result, while migrant smugglers and the related organizations aim to spread their influential message to a critical mass in the shortest possible term, a preventive strategy should interfere with the smugglers' narratives before they "cross the chasm".

Finally, we must understand that humans are biologically, geographically, and temporally incapable of sensing the world in its entirety, due to its complex and erratic nature. As Lippmann explains, "whatever we believe to be a true picture, we treat as if it were the environment itself."<sup>46</sup> Our cognition is not capable of processing all the information, so we heavily filter and reconstruct the reality in our mental models. The dynamic model of situated cognition proposed by Shattuck and Miller argues that sensors (including human sensors) perceive only a portion of reality; moreover, the array of sensors and the related technological system transfer only a subset of all available data.<sup>47</sup> The result is our "situational awareness", which is always a simplified representation of the real environment (pseudo-environment).<sup>48</sup> This pseudo-environment is characterized by the state of mind, previous knowledge, and the sensory ways in which we receive environmental stimuli.

As a result, people may act in ways that do not "rationally" conform to what the situation logically would require. Moreover, if someone has no direct experience in a particular situation, his mind creates a mental image to generate feelings as the basis of the reaction.<sup>49</sup> Lippmann refers to this imperfect representation of the reality as the pseudo-environment, which is formed as an interaction between the human mind and the real environment.<sup>50</sup>

In an uncertain environment, we tend to seek patterns based on previous experiences. The incoming data is propagated through different lenses (or filters) that may or may not change the processing of the information. The massive amount of data is mainly filtered by the array of sensors (either technical sensors or the focus of human cognition), the cultural and social factors, and the state of mind (emotions, psychological factors).

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<sup>45</sup> MOORE 1999.

<sup>46</sup> LIPPMANN 1922, p. 1.

<sup>47</sup> SHATTUCK – MILLER 2006.

<sup>48</sup> Ibid, p. 4.

<sup>49</sup> LIPPMANN 1922, p. 4.

<sup>50</sup> Ibid.

Moreover, Tversky and Kahneman found that human cognition relies on heuristics when faced with complex and uncertain problems.<sup>51</sup> While these heuristics are useful and necessary tools for rapid decision-making, they might serve as the basis for cognitive biases that lead to severe judgmental errors and poor decision making.

The overall result is that, in addition to the imperfect perception, our human cognition tends to fill in the blanks based on previously experienced patterns.<sup>52</sup> Consequently, we process only a tiny portion of the already reduced and probably misrepresented dataset, and our biases further distort this information, as we try to make sense of our reality. In other words, humans act upon what they perceive to be true, even if there is a significant difference between the perceived image and the real environment.

## Applying the theory and models

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So far, we have introduced some models to understand various contexts and the decision-making process, and explored a wide array of theoretical backgrounds in order to better understand social influence in the context of illegal migration. In the next portion of this article, we will shift our focus to the Mediterranean region and specifically analyze the European Commission's Directorate of General Migration and Home Affairs' recent illustrative case study.

The study surveyed 686 migrants (including illegal migrants, asylum seekers, and refugees) who arrived in Italy in the second half of 2017. The majority of the respondents originated from Sub-Saharan Africa, north of the Equator. The gender ratio was 90% male and 10% female, while the vast majority (96%) of the respondents were between the ages of 16 and 34.

According to the study, we can claim that the migrants' knowledge of Europe is somewhat limited and distorted.<sup>53</sup> The authors highlight that 73% of the surveyed migrants had little if any, knowledge of any European country upon arrival. "In fact, even among those who were able to provide the name of a specific country, knowledge of its location and/or dynamics was scant."<sup>54</sup> It is worth noting that there were significant differences between nationalities in this regard. While

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<sup>51</sup> TVERSKY – KAHNEMAN 1974.

<sup>52</sup> FREEMAN 1992.

<sup>53</sup> SANCHEZ ET AL 2018.

<sup>54</sup> Ibid, p. 15.

approximately 70% of migrants from Mali, Senegal, and Nigeria could not name a specific destination country, only 23% of Tunisian migrants could not.<sup>55</sup> Also, migrants who had friendship or kinship ties to any EU member country were most likely to name a specific country of destination.<sup>56</sup>

The lack of relevant information among the majority of migrants raises the question of what was the mental basis (mental model) of the decision-making process in this group. Furthermore, it is certainly a missed opportunity to prevent an evolving crisis if we do not consider how to influence smugglers' narratives and social influence by providing them reliable information through understanding their OODA loop.

We also know that once they make the decision to migrate, during and after the journey, they prefer to communicate with fellow migrants from the same ethnic group. The initial relocation decision is often a collective one, made by the family in which the individual is embedded. Immediate relatives often bear the financial burden of the journey; therefore, they are directly involved in the decision-making in these cases.

Migrant smugglers are also highly responsible for spreading disinformation through social networks. As they are running an extremely successful business model, they are highly motivated to shift people's perceptions and trigger a migratory movement.

Smugglers are usually paid for different segments of the journey as they are selling modular services for parts of the migratory routes. The subsequent payments are often paid by family members using money transfer services or middleman process called "hawala method." As a result, the collective decision-making process is prevalent not just in the initial relocation decision, but also for the subsequent phases of the journey:

*The decision to leave Libya was a collective process. Migrants reported talking with family members, employers and co-workers in Libya and in their countries of origin, mainly by phone, to consult them about leaving.*<sup>57</sup>

Interestingly, conditions in Libya were frequently cited as the main factor in the decision to travel to Europe, while they were concise and obscure in articulating the incentives to leave their home country (the initial step to migrate).<sup>58</sup> This fact

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<sup>55</sup> Ibid, p. 16.

<sup>56</sup> Ibid, p. 17.

<sup>57</sup> Ibid, p. 19.

<sup>58</sup> Ibid, p. 15.

alone is a prevalent indicator of social influence and perception bias at play. The surveyed migrant population was not aware of the factors driving their decisions. Namely: the main reason for leaving their home country and entering into a much more dangerous territory with no effective governing authority or rules of law (e.g. Libya). Later on, their cognition picked up on the powerful effect of violence across Libya and this image (and experience) became the main symbol of their pseudo-environment.

According to the European Commission's survey, the main source of information for migrants is their kinship and friendship networks. While migrants prefer face-to-face communication before leaving their home country and during the journey, they also use social media and telephone communication to keep in contact with friends and relatives living in the diaspora.<sup>59</sup>

Social media platforms are usually not a means of communicating about illegal migrant activity. Smugglers and illegal migrants often use encrypted communication platforms like Viber or Whatsapp to discuss the details of the illegal journey.<sup>60</sup> Interestingly, migrants do not see interactions with smugglers negatively. It seems that they are well aware of the dangers and the possible exploitation by smugglers; moreover, they mostly accept it as a necessary condition of the journey.<sup>61</sup>

The migrant smuggling network is not unified; it consists of competing groups who are not selling specific destinations, rather provide transportation generally to the territory of the EU. In several cases, the smuggling groups put high emphasis on their reputation and credibility to gain a competitive advantage.<sup>62</sup> While they are not the primary source of information, they are definitely shaping the perception (pseudo-environment) of migrants by spreading their narratives through face-to-face communication. The reputation of smuggling groups and their contact information spread mainly through the social network in which both the migrants and the smugglers are embedded.

While family members and smuggling groups play a key role before leaving their home country, fellow migrants and eventually humanitarian workers become the most trusted sources of information during the journey (Figure 5). Thus, non-governmental agencies have a huge responsibility in shaping the perception of migrants, and influencing their decisions.

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<sup>59</sup> Ibid, p. 7.

<sup>60</sup> UNITED NATIONS OFFICE ON DRUGS AND CRIMES 2015.

<sup>61</sup> ELBAGIR 2018.

<sup>62</sup> UNITED NATIONS OFFICE ON DRUGS AND CRIMES 2015.

Migrants believed the initial messages that they would be welcomed by a country and people that respected human life, and where they would be unlikely to experience or witness the violence that they had seen in Libya or in their countries of origin. These notions were repeatedly communicated to migrants upon their rescue by ship crews, humanitarian and reception centre staff. Yet, as shown in the following section, everyday social interactions often proved difficult.<sup>63</sup>

Upon arrival, migrants are confronted with a harsh reality that differs from their perception in almost every detail. This often causes confusion, fear, and anxiety. “During the first few weeks following their arrival, migrants start to realize that many of the initial messages about being welcomed in Italy are not necessarily reflective of the conditions that they face.”<sup>64</sup> Later on, migrants become highly anxious about their inability to work legally.<sup>65</sup> Even if they possess the documentation, they are faced with several structural difficulties to be integrated into the labor market.

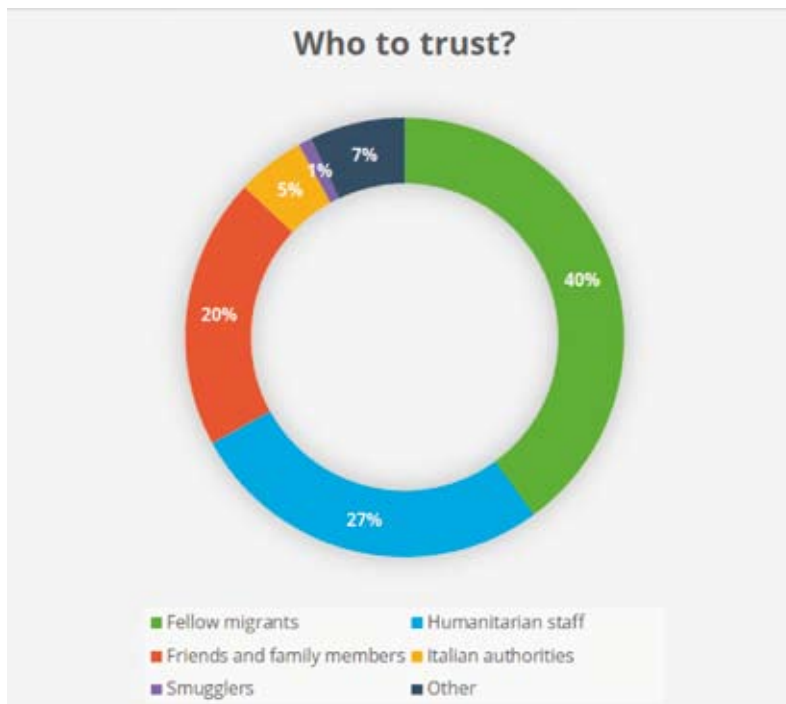


Figure 5 The Most Trusted Sources of Information Among Surveyed Migrants<sup>66</sup>

<sup>63</sup> SANCHEZ ET AL 2018, p. 25.

<sup>64</sup> Ibid, p. 26.

<sup>65</sup> Ibid, p. 11.

<sup>66</sup> SANCHEZ ET AL 2018.

CelsiusIt is no surprise, that the deprived social situation leads to an increased homophily among migrants from the same ethnic group, which might promote biased information and increase their vulnerabilities. Powerful incentives like providing for their families or paying migrant smugglers may trigger further desperate decisions that could drive migrants to the illegal labor market, forcing them into abusive employment situations.<sup>67</sup>

## Food for thought

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A successful strategy to prevent future migrant crises requires understanding the nature of social influence and countering smugglers' narrative. Namely, the more illegal migrants reach EU countries, the larger the diaspora, and the more successful the smugglers' business models are. Smugglers, donor societies, and diaspora groups are just some actors (social groups) who might spread biased or distorted information. NGOs and humanitarian workers also have a great responsibility in sharing relevant and realistic information, as they are often the first credible source of information regarding the EU. If they provide one-sided information about the expectations and possibilities, it increases the probability for illegal migrants to get trapped in a deprived and desperate situation.

We can assume that there is a reinforcing loop in the cognitive domain of the migrant population that inherently affects the decision to migrate. Namely, the more illegal migrants reach EU countries, the larger the diaspora, and the more successful the smugglers' business models. Consequently, the larger social influence and influential messaging will trigger more people to migrate. This reinforcing loop can be altered by countering the smugglers' narratives and mitigating biased and distorted information about the journey and the destination. Moreover, effective crisis prevention requires countering disinformation and influential messaging before the diffusion reaches a critical mass.

We propose a new approach that considers not just the socio-economic or socio-political drivers but also the social influence and perceptual biases that inherently shape the dynamics of illegal mass migration in the Mediterranean. Based on our analysis, we still have very limited knowledge about the cognitive aspects of migrants' decision-making, our sources of information are not collected in one large database, and a unified understanding is still missing. We argue that these aspects should be fixed in order to create a common strategy to mitigate future migrant crises.

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<sup>67</sup> SANCHEZ ET AL 2018.

For future analysis, we would suggest empirical studies that collect qualitative data about the perceptual bias in certain areas. Modelling the diffusion of biased information is available by the widely used Bass diffusion model; however, determining the infection rate requires empirical observations and systematic data collection.

This way, we would gain a massive amount of data and have a more nuanced situational awareness about social influence in migration networks. Exploring the social-psychological factors of the decision-making and using the models introduced above will lead to a better understanding of the underlying dynamics in international migration, and provide points of intervention for future crisis scenarios.



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