How Luhmann's systems theory can inform gambling studies

Abstract

Gambling and problem gambling studies tend to be characterised by individual-based approaches both theoretically and methodologically, while sociological approaches remain underutilised or even marginal. In this study, we discuss the potential of Niklas Luhmann's systems theory in the analysis of gambling. As opposed to positivist or individualistic approaches, Luhmann's work is strongly constructivist: neither systems nor their components are seen to be made up of individuals. Using systems theory in informing gambling research distances the research interests from individuals and directs it towards societal mechanisms, structures, and processes. Therefore, a systems theoretical approach can offer novel tools to study gambling, but also the paradigm of gambling research itself.

This paper demonstrates how systems theory can critically inform gambling research through five operationalisations: gambling as a system, the gambling experience, the regulation of gambling economies, gambling providers as organisations, and systems theory as a methodological program. These five operationalisations can serve as an important window to widen perspectives on gambling.

Keywords

Introduction

Gambling is a thoroughly sociological phenomenon. Previous research has shown that social settings influence who gambles and what, but also what kind of justifications are used in its regulation, who can provide it, and how acceptable gambling is (e.g., Chambers, 2011; Egerer et al., 2018a; Orford, 2011; Sallaz, 2006). However, research looking at the social structures behind

gambling has had a marginal position in a field that has been strongly focused on methodological and theoretical individualism. This has not only been true of the dominant position of bio-psychological viewing problem gambling as a mental or behavioural disorder, but also of economic theories portraying the act of gambling as consumption (see Aasved, 2003; Marionneau, 2015). This individualist approach has affected how we view problem gamblers, but also how we consider gambling provision or even gambling research (cf., the recent debate on whether gambling is a capitalist conspiracy (e.g., Delfabbro & King, 2017; Livingstone et al., 2018).

Viewing the gambling offer or the gambling habit in terms of social structures instead of individuals comes close to how the German sociologist Niklas Luhmann (1927–1998) described his systems theory. For Luhmann, neither systems nor their components are made up of individuals. Instead, systems are both based on and enable communication, or more precisely, they process and constitute meaning communicatively. Luhmann (1984) sees systems as necessary structures that reduce environmental complexity (*Komplexitätsgefälle*) and constantly create order, which can be anticipated and to which further communication can successfully connect. Using systems theory in informing gambling research therefore naturally distances the research interests from individuals' intentions and actions. Instead, the systems theory looks towards the reproduction of societal mechanisms, structures and processes independent of individual intentions to gamble.

The systems theory has been applied to a number of fields, in particular those closely connected with communication such as media studies, organisations, and translation (Görke & Schöll, 2006; Seidl & Becker, 2006; Seidl & Mormann, 2015; Tyulenev, 2009; Vogd, 2011), but also in alcohol research (Demant & Ravn, 2013). Although gambling has not been viewed as a Luhmannian system in previous research, save for brief developments by Wenning (2017) and Drews and Wuketich (2019), gambling studies have considered the topic, particularly from the perspective of how

gambling-related phenomena are processed and conceptualised differently between disciplines and fields, *i.e.,* systems. All systems process gambling differently. Gambling has been viewed as economic activity or as a matter of financial problems (e.g., Heiskanen, 2017). As a highly regulated field, gambling is also processed and observed by the legal system (e.g., Bereiter & Storr, 2018; Littler & Fijnaut, 2006) and highly embedded in the political system that views gambling through its effects on democracy and politics (e.g., Adams, 2008; Egerer et al., 2018b; Loer, 2018). The medical system has integrated dysfunctional gambling into its system through medicalisation (e.g., Ferentzy & Turner, 2013; Rosecrane, 1985). Other gambling literature has developed frameworks to account for the gambling industry as a system (Bjerg, 2011; Kingma, 2004, 2015; Livingstone & Adams, 2011; Livingstone & Woolley, 2007; Markham & Young, 2015; Nicoll, 2013, 2019), but not from a Luhmannian perspective.

The aim of the current paper is to advance the sociology of gambling by discussing how Luhmann's systems theory can inform gambling studies and with what kind of practical applications.

Gambling as a system?

Luhmann strived to shape a comprehensive social theory built around the idea of systems. His theory embraces living beings as well as social structures. Still systems theory is as much a conceptual endeavour as it is a research program; in the end what systems are and how these are interrelated remains an empirical question (Virtanen, 2015a). On the most general level, Luhmann distinguishes between organic systems, psychic systems and social systems. Gambling as a system would be part of social systems. This does not mean that social structures are disconnected from biological or psychological processes. Instead, the organic and the psychic system are part of the environment of the gambling system. Social systems can be separated into society, organisations and interactions (Luhmann, 1984; Seidl, 2005). Here, gambling can be seen as part of society, but

operational structures of gambling may also be considered organisations. Furthermore, society as systems are subdivided into what Luhmann calls function systems, such as the economic and the legal system. Finally, the primary function systems are divided into further subsystems (Seidl, 2005).

All these different system types are formed by constantly separating themselves from their environment. Systems therefore become established through differentiation from other systems. In Luhmann's (1984) terms, they become autopoietic. This means that they are constantly produced and reproduced based only on their own elements, resources and logic, instead of from something outside the system. In this sense, Luhmann's systems are closed at the level of operations: Systems can only take account of their environment from their own, system-specific perspective. The continuous formation of systems happens in communication. Systems are not based on individuals or actors but solely on communication. On the one hand, humans take part in the constant chaining of communication – i.e. formation of systems – by communicating based on the logic of each system. On the other, systems also steer communication by anticipating system-specific chaining of it. This happens based on a binary code, such as legal/illegal in law, which gives specific meaning to communication and thus reproduces the system.

Systems are nevertheless open at the level of interactions. They interact with their environment, which consists of other systems (Seidl, 2005). In contrast to a structuralist model of 'choice within constraints', Luhmann (1984) argues that systems are not stable because they need to adapt continuously to changing situations that originate in the changing environment. Luhmann uses the term *structural coupling* to describe how systems enable the interpretation of each other and thereby reduce environmental complexity from within the system. Two systems never merge, but they observe each other based on their own logic. For example, gambling operation may be viewed as a

question of owning and operating a business in the economic system, as a question of law in the legal system, or as a question of public and individual health in the medical system.

Gambling has not been studied empirically in this way as a system. The question regarding whether gambling constitutes a system – and if yes, what kind – remains open. Several possibilities exist. Gambling could be conceptualised as a subsystem of the economic system considering the central position of money in gambling. Wenning (2017) has classified gambling as a subsystem of the entertainment system. However, entertainment is not conceptualised as a primary function system in the systems theoretical literature, but a subsystem of the media system (Görke & Scholl, 2006). It would also be possible to conceptualise gambling as a function system of its own, even though creating new systems should proceed with caution. What eventually constitutes a function system has also been debated. Roth and Schütz (2015) suggest that they are societal systems of most general order, i.e. systems, which are not subsystems of other systems. Each function system specialises in a different societal function, and none is dominant over others. Functionality in this regard does not mean a whole-and-its-parts explanation for their existence; systems are not fulfilling functions for society as in Parsonian structural-functionalism. Rather, systemic functions are temporary solutions to process environmental complexity (Borch, 2011).

Figure 1 visualises the systemic environment of gambling with examples of interrelated systems and their binary codes based on previous gambling research and Luhmann's conceptual work. While this has not been empirically established, for the purpose of this model we suggest conceptualising gambling as a system that communicates using the binary code of stake/non-stake. This means that the gambling system anticipates communication around 'stake/non-stake', a communication which establishes the gambling system. The stake can be anything that can be treated by the system as such – money, property or prestige (see e.g., Simmel, 1983 [1922];

Oldman, 1974; or Reichertz, Niederbacher, Möll, Gothe, & Hitzler, 2010). Such communication would make gambling self-sufficient, i.e. autopoietic. Gambling as a system would only be concerned with economic transactions or questions of problem gambling as environmental complexity that would be processed as a matter of a stake. The benefit of using stake/non-stake is its lack of regard for the type or origin of the stake as opposed to for example the economic system where the origin of money is paramount. Henceforth, economy, health or families are not disregarded, but processed in the gambling system based on its own premises.

Figure 1: The gambling system and its environment

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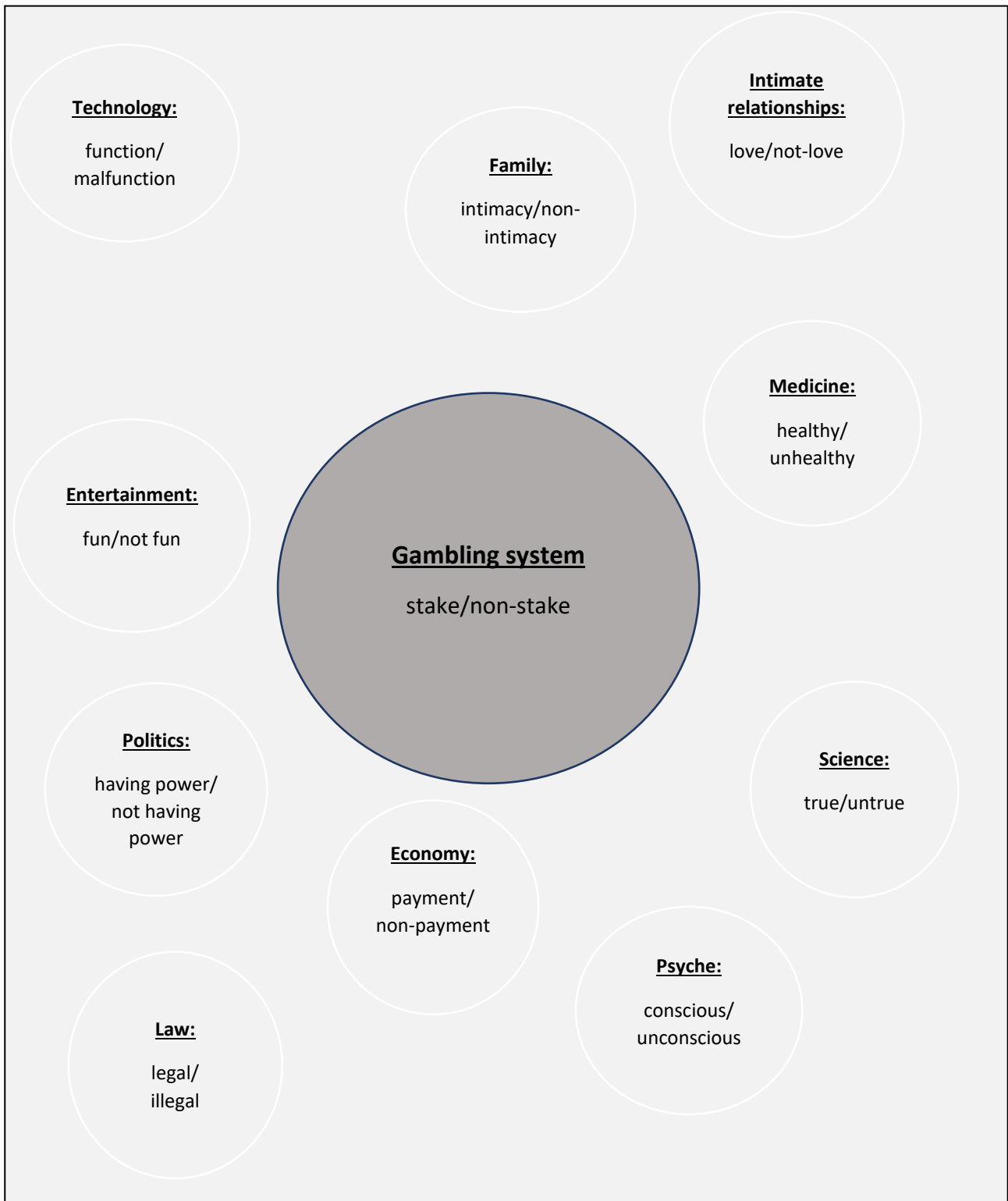
If we understand gambling as a function system, it would offer a communication framework that

other systems could not or would struggle to provide. Based on previous research, such

communication could be that of expressing irrationality and acceptable loss of control (Cosgrave, 2006; Devereux, 1980 [1949]; Elias & Dunning, 1986; Giddens, 2006). Others have also suggested that the function of gambling is to allow people to demonstrate their qualities by tempting the fates (Oldman, 1974; Reichertz et al., 2010; Simmel, 1983 [1922]).

From an opposing viewpoint, Wenning (2017) sees the function of gambling as coping with chance and contingency in a time of increased uncertainty. Whether modern societies are indeed more uncertain has nevertheless been debated (e.g., Binde, 2005 on gambling). Uncertainty is rather produced by human decisions, understood as risks (also Beck, 1986). A point in case is the liberalised gambling market which is regulated through the control rather than avoidance of risks (Kingma, 2004). Luhmann (1991) has also addressed the question of uncertainty in modernity. In his thinking, modernity is not necessarily more uncertain, but how uncertainty is produced has changed. People are no longer at the mercy of fate. Instead, risk refers to a situation in which a decision needs to be made for a danger not to turn into harm, but that at the same time offers a chance for gain (Luhmann, 1991). Gambling would therefore be based on risk-seeking instead of risk avoidance similarly to the insurance business, or to developing derivates in the stock market (Esposito, 2010).

Regardless of whether gambling is considered a function system or a subsystem of another system such as economics or entertainment, a system theoretical perspective opens analytical paths to better understand gambling as social phenomenon. If everything else becomes part of the environment of the gambling system, gambling in a sense turns from being a dependent variable among others into an independent variable. This means for example shifting perspective from why people gamble (excessively), to what (excessive) gambling is.

The gambling experience

The impact of gambling on the human psychic system is an example of systemic interaction that considers the gambling experience of the individual. Palomäki and colleagues (2013) studied how losses in poker can be observed by the psychic system. From the perspective of a gambling system, the emotions sparked by a loss constitute a part of the environment that is processed through communication. An emotional reaction to a loss can result in what is called tilting (making detrimental decisions). From a systems theoretical perspective, this emotional reaction and possible tilting needs to be processed and re-integrated into the gambling system. In a way, tilting is already integrated into the gambling system since a poker player continues to stake often disproportionally high amounts to continue gambling, but an impassive reaction is also a way to continue and reproduce the gambling system. A player's competence not only as a player but in remaining in control becomes the stake in the gambling system. The inability of the psychic system to process gambling-induced complexity – such as the mechanisms of chance, may they be 'pure' or tilted by the gambling industry as described by Natasha Dow Schüll (2012) in her work on how the gambling business operates in Las Vegas to engage the player to continue gambling – might provide an explanation to why gamblers continue to chase losses or believe in near misses (see Sulkunen et al., 2019).

Another example of how systems observe each other is provided by Borch (2013) who studied the impacts of problem gambling on families and intimate relationships. Her study concludes that hiding gambling-related problems from significant others and gambling in secret are phases of problem gambling. In a system theoretical frame, trust between household members becomes the stake. The chance of being caught that is embedded in intimate relationships, is therefore processed by the gambling system. Trust can be seen as a structural coupling between the household and the

gambling system. For the household system (in particular the intimate partner), trust is paramount to enabling and continuing an intimate communication that would otherwise, as elaborated by Luhmann (1982), be unlikely to succeed. In the gambling system, trust is the glue that keeps the system running in the light of the risk of losing one's stake. Conflict is created when systems process continual gambling based on a differing logic. For instance, chasing losses would be viewed by the family or intimate relationship system as a matter of discontinuation (divorce) but by the gambling system as continuous risk-taking or stake to win. The systems theory therefore allows identifying such conflicts by focusing at the level of communication rather than individuals. The identification of the different systemic communication may also be helpful in mitigating such conflicts in practice.

The regulation of gambling economics

In the previous section, we have discussed the possibility of gambling as a function system. However, it is also possible to operationalise Luhmann's thinking in an analysis of gambling as a subsystem of the economic system. Gambling is a form of economic activity; the existence of gambling correlates positively with the presence of an economic system that is based on monetary exchange and a high degree of societal complexity (Pryor, 1976). Because the regulation of gambling operates based on the logics of the legal and political systems, the interaction between economics and politics offers a further perspective into how systems theory can be applied to gambling studies. This approach comes close to political economy which is the study of how economics and public life (politics, law, regulation) interact. In gambling research, the political economy framework has been applied to studies on the interest groups in gambling regulation (Paldam, 2008; Sauer, 2001), the interests in gambling taxation (Smith, 2000), and gambling research itself (Young, 2013). As such, the political economy perspective taps into the essence of Luhmann's systems theory by focusing on the structural coupling between economics and politics,

or in other words, how the economic system (e.g. revenue generation) observes the complexity of the political system (e.g. effective regulations) and vice versa (see e.g., Chambers, 2011 on the economic and regulatory differences across jurisdictions). Such an approach might be particularly fruitful in comparative studies as it would explain why jurisdictions opt for different regulatory solutions despite similar economic interests in the operation of gambling (e.g., Egerer et al., 2018a).

Extensive research evidence exists on the best practice policies in gambling regulation, including limiting availability, marketing and sensory inducements to gamble, implementing pre-commitment, and separating regulation from financial interests in gambling revenue (see Sulkunen et al., 2019 for a summary on evidence). While such measures have been implemented in some jurisdictions – including limitations on availability in Norway, Russia and several Eastern and Central European countries, and the increasing amount of limit setting and pre-commitment tools available particularly in online environments (Auer, Reiestad, & Griffiths, 2020) – actual policies are often quite different from 'optimal' policies'. This has been attributed to the difficulty in changing established regulatory patterns (Marionneau, 2015) as well as financial interests and path dependencies that prevent the regulator from implementing effective policies of problem prevention, as these will impact revenues (Borrell, 2008; Egerer et al., 2018a; Paldam, 2008).

In addition to these, insights from Luhmann's systems thinking can offer a further explanatory perspective. Economics is one of the core functional subsystems of society (Luhmann, 1988; Roth & Schütz, 2015). Luhmann (1988) describes economy as a system in which money plays a central part and forms the binary code for communication which is payment/non-payment. Like all systems, the economy is autopoietic, as it consists of payments that are only possible due to payments, and which allow further payments. The elements of the system are therefore produced in the system, and not in its environment. Since all systems form only based on their specific way of

communication processing, a pessimistic view would be that attempts at influencing the economic system directly with politics is mainly useless (Joas & Knöbl, 2009). The gambling industry, and its beneficiaries will therefore look at regulations from the perspective of how they impact revenue, and not for example public health considerations or the common good of society (Nikkinen & Marionneau, 2014).

Structural coupling between systems enables this inter-systemic communication and link them together. For example, contracts between the juridical and economic system, such as operating licenses in gambling enable the economy through legislation. Therefore, while Luhmann's systems are closed in that they are autonomous and have exclusive functions and codes for communication, the systems are also open to influences from the outside environment. The environment does not determine the operation of the system, but other systems can contribute to its constitution (Luhmann, 1984).

Regarding gambling studies and gambling policies, Luhmann's understanding of systems and their mutual interaction sheds light on what kind of systemic changes are possible, and under what kind of conditions. Unlike in Foucauldian applications of governmentality studies that observe policies through, and as interwoven with, the use of diffuse power relations (see e.g., Lemke, 2019), a Luhmannian perspective does not take a critical stance from the outset, nor is it personified in individuals. Instead, Luhmann follows the logic of the system to show how policy discourses come into existence and how they work, both in relation to as well as based on different system logics (e.g., Virtanen, 2015a; Vogd, 2011;). Luhmann's theoretical insights would suggest that regulations on the gambling system are possible if instead of attempting to determine rules for operations they contribute indirectly by shaping the structures through which gambling is institutionally possible.

Gambling providers as organisations

Thus far we have only considered gambling as a system operating in society, either as a function system or as a sub-system of economics. Luhmann's separation of social system types into society, organisations and interactions (Luhmann, 1984; Seidl, 2005) nevertheless also allows studying gambling from the point of view of the organisation system. Luhmann's insights have been previously applied in organisation studies particularly in German-speaking countries (e.g., Seidl & Becker, 2006; Seidl & Mormann, 2015; Vogd, 2011). In gambling studies, Kankainen and Hellman (in press) have looked at the beneficiaries of gambling as an organisational structure using Luhmann's concepts, but no previous studies have considered gambling operation from the point of view of an organisation as a decision-based system.

For Luhmann, organisations belong to social systems because, similarly to the function systems of society, they are based on their own logic that cannot be traced back to individual actors or other systems. Organisations produce and reproduce themselves by distinguishing themselves also from other organisations. As with other system types, distinction and autopoiesis are at the heart of Luhmann's understanding of organisations: organisations can be identified by observing the distinction they make between themselves and their environment (Luhmann, 2000; Seidl & Becker, 2006). However, organisations rarely process communication of one system only. Instead, most organisations are polyphonic; they bring systems together in a controlled manner. Universities, for example, are research and education organisations, but they also have budgets, contribute and adapt to legislation and hold elections as well. The diverse logics of science, education, economics, law and politics are brought together by organisational decisions making procedures. For organisation system, *decision* is the elementary form of communication processing: organisations are reproduced as chains of decisions (Seidl & Becker, 2006; Seidl & Mormann, 2015).

For Luhmann, a decision is not a mental operation but a form of communication that is also binary in the sense that it includes a selected and a rejected alternative. Luhmann calls this form of communication paradoxical: the more alternatives are presented, the less justified the chosen alternative appears, but the more justified the chosen alternative is, the less other options will appear as viable alternatives. This paradoxicality is nevertheless also the key to organisations' success to absorb uncertainty and achieve results: When a decision is reached, alternatives disappear, and further decisions are built on this *decision premise* (Seidl & Becker, 2006).

The view of the decision premise help to shed light on how further decisions are based on existing ones. Once a decision is reached in an organisation, further decisions are built on its – often recorded – premise. Understanding established gambling providers as organisations can therefore clarify why they are often perceived as the only possible alternative. National gambling operations and systems depend on justifications that overshadow possible alternatives (Marionneau, 2015; Marionneau, Nikkinen, & Egerer, 2018). Moreover, the decision for a gambling operator to introduce new, more addictive games for the consumer, is based on the premise of earlier decisions to increase profitability or channel consumption away from unlicensed operators. The premise is therefore not questioned, and the introduction of the new game appears as a justified next step, even though it might not appear that way based on the logic of another system, such as that of public health (cf., Sulkunen et al., 2019). In line with Luhmann's thinking, organisational decisions are not made by individual decision-makers with rational motives. They merely follow the logic of the system and the premise of previous decisions. Hence, gambling providers as organisations can act against the general interest without needing to strategically engage in such a direction (cf. Delfabbro & King, 2017; Livingstone et al., 2018). Following the systems theory, not only the logic of the economic system but previous decisions of the organisation system intervene in public

interest policy-making. Following the economic logic of revenue maximisation, gambling companies control the risk of gambling harm by 'responsible gambling' measures (see e.g., Kingma 2015). Independent of the final effectiveness of these measures in practice (c.f., Sulkunen et al., 2019), the once taken decision for responsible gambling measures will be the basis for future decisions in preventing gambling harms and exclude other, maybe more effective, harm prevention. Validating this claim remains an empirical question, but a systems theoretical approach might lead to other implications on how to implement gambling harm prevention measures in practice, not only in terms of shifting focus from revenue maximisation but also in a path-breaking manner regarding decision premises. Organisations such as gambling companies are the instrument of a functionally differentiated society to generate inequalities (Braeckman, 2006), and their decisions and the coordination between them can be the object of system theoretical analyses.

Systems theory as a methodological programme in gambling research

In this final section, we will move on from applications of systems theory as an analytical tool to using it as a methodological approach. The methodological value in Luhmann's thinking is in its focus on communication rather than individuals, which avoids reducing social phenomena to individuals and their preferences. This perspective stands in contrast to predominant practices in gambling research and particularly research on problem gambling which tends to put the player centre-stage by focusing on the individual and their choice to gamble (or not). For instance, screening and diagnostic instruments (e.g., SOGS, DIGS, DSM-V, ICD-10) identify disordered gambling through cognitive malfunctions and adverse consequences. One reason for the individualisation of (problem) gambling may be located in disciplinary hierarchies and traditions, but also in methodological individualism in (funded) research programmes across disciplines.

As we have seen, in Luhmann's thinking, social systems consist of communication and reduce environmental complexity and contingencies. This statement can be interpreted not only as a theory of society but also as a methodological programme to ask how the empirical data itself constructs and limits its topic in order to establish an order in the research process. Research data is a result of many kinds of reductions of contingencies (Nassehi & Saake, 2002). For instance, options given in survey studies are predetermined, and interviewees in qualitative interviews are limited by research expectations, interview questions and the situation. In other words, the data collection excludes and includes certain factors in order to make it possible to talk about – in our case – gambling.

Moreover, instead of trying to understand (verstehen) the meaning of the collected data by deciphering an assumed underlying order, a gambling research informed by system's theory studies how order comes to existence in the first place (Nassehi & Saake, 2002). Consequently, systems-theoretical research does not content itself with a simple contextualization of the data but focuses on the ways the data becomes meaningful by diverse framing processes instead. Instead of interpreting what the respondents might mean, the leading question is, how it is possible to communicate about the topic in the first place, and what kind of framings make this possible. In other words, how respondents (or other analysed documents, media text, etc.) manage to talk about gambling itself.

To grasp these processes in detail, context and contexture (Vogd, 2011) are analytically separated. The context is concerned with for example the origin of the data (such as the country of data collection, profession of respondents, etc.); the contexture is the societal context of the context, such as the origin of the data. Hence, to focus on contextures, is to ask what lies behind the creation of the data. Equipped with these conceptual tools, a systems-theoretical researcher can analyse diverse framing processes at the same time by moving between contexts and contextures.

The orientation to (trace) contextures in the research process connects systems-theoretical methodology to a theory of society as contextures resemble societal (sub) systems. For instance, the communication of the gambling system and the continuity of this communication depends on the arrangement of connectable contextures. The identification of such contextures, such as the medical (gambling disorder), the economic (debts), or the family (trust), therefore constitutes the main objective of sociological gambling research informed by systems theory. This might appear a rather simple and descriptive endeavour at first but can easily become more complicated when trying to establish the whole network of polycontexturalities. Such networks are dependent on the observer who replaces any linear causality assumed in actor-based analytical frameworks (Vogd, 2011). The validity of observations may be debated, but observations are not arbitrary because some interpretations can be clearly identified as false (Esposito, 2013). It might not be possible, nor even plausible, to imagine all possible ways of reducing environmental contingency but we can look at how contingency is reduced in the data in several ways. In qualitative, oral and written data, this can be accomplished by looking at the progression of sentences and identifying which themes and contextures follow the previous ones (Nassehi & Saake, 2002). Henceforth, systems theoretical thinking offers also the possibility to a critical analysis of underlying logics, which are not necessarily obvious to the informants themselves.

The systems theoretical methodology can also be applied to and inform quantitative research. First, similarly to qualitative studies, systems theory allows for a shift in focus. Research plans, questions and aims are based on the interests of researchers which in turn is heavily influenced by their theoretical background and view on the world, thus the research paradigm (see e.g., Corbetta, 2003; Kuhn, 1962). Sociologists influenced and informed by functionalism might for instance ask what function gambling serves in society. For instance, Jeffrey Devereux (1980 [1949]) famously argued that gambling was beneficial to societies as it helped relieve social tensions.

Second, a systems theoretical approach can also inform on the construction of the employed statistical models. If we see gambling as a system and hence as an independent variable this can be taken quite literally in regression analysis: Instead of measuring for instance the frequency of expenditures on gambling, a system approach analyses gambling as gambling-communication. Gambling is what is meaningful as gambling in contemporary society. Consequently, more complex models informed by systems theory can be generated. Grant, Peterson and Peterson (2002) for example created a model based on six functional systems of a modern society, including state variables of information. The study sought to understand the interaction between natural and human factors and its effect on environmental action. Similar models could be constructed to enquire about gambling participation in different jurisdictions by considering the primary functional systems of these societies.

Discussion and conclusions

Contemporary sociological studies have made some interesting advances in recent gambling research, including ethnographic approaches, policy analyses, critical gambling studies, and anthropological approaches (e.g., Bedford, Casey, & Flynn, 2018; Binde, 2005; Casey, 2008; Egerer & Marionneau, 2019; Egerer et al., 2018a; Falk & Mäenpää, 1999; Kingma, 2015; Oldman, 1974; Reichertz et al., 2010; Reith & Dobbie, 2011; Schüll, 2012). Classical sociological theorists have also taken up the example of gambling particularly from the point of view of irrationality (Huizinga, 1938; Smith, 1863 [1776]) or functionalism (Caillois, 1958; Devereux, 1980 [1949]). Nevertheless, the use of sociological theory has remained marginal in gambling research at large, and the field has been highly dominated by both theoretical and methodological individualism. Gambling studies have not made much use of sociological advances particularly in the field of structural and constructivist analysis.

Luhmann is not the first social theorist to take up the idea of systems. For Claude Lévi-Strauss (1969), systems were latent structures based on dualistic oppositions such as nature/culture or raw/cooked. Luhmann's systems also come close to Pierre Bourdieu's notion of fields, defined as spheres that have specific properties but that are also connected to other fields more closely than in Luhmann's thinking (Vogd, 2011). Furthermore, Luhmann's thinking is partially built on the work of Talcott Parsons' understanding of systems, but Luhmann rejects its basic assumptions. First, Luhmann does not take the individual nor human action as a unit or as the basis for his theory. Second, Luhmann also departs from the macro-sociological tradition of seeking for the normative (foundations of) social order central in Parsons' later work.

For Luhmann, the tragedy of society lies in that systems follow their own logic, not anchored to norms and values. The legitimacy of society (as systems) is therefore not achieved because people are assumed to share the same values. Instead, systems adapt constantly to changing environments without a common telos or grounding. In this regard, Luhmann's understanding of systems also differs from that of Jürgen Habermas, for whom a lifeworld exists outside of systems, although systems, and particularly the market system, are increasingly 'colonising' it. For Luhmann, the environment of systems is merely made up of complexity created by other systems.

Consequently, and despite the abstract tone in Luhmann's writings, we encourage readers to approach his theory first and foremost as a research agenda. Instead of asking huge questions of (the possibilities of) the order of society as a whole à la Parsons, systems theory helps to grasp fragile order-generating processes as reductions of complexity; processes, which seem to be manifested only locally but travel through scales and connect to diverse systems when inspected through a systems-theoretical lens. In this sense, Luhmann's theory bears resemblance to Foucault, for whom

power was not a structure but interwoven with changing and subtle discourses and put into effect locally (Foucault, 1978).

In the current study, we have identified at least three ways in which Luhmann's work is of value to gambling studies. First, Luhmann's theory offers a wide potential for application. In the current paper, we have developed five possible analytical or methodological perspectives using Luhmann's ideas, but there are possibly many more. As we have discussed, systems theoretical approach can be applied to study and understand highly diverging topics in gambling research, ranging from the gambling experience to the regulation and operation of gambling, and methodological considerations.

The second advantage in Luhmann's thinking is the possibility to avoid theoretically postulated asymmetries: No system is seen to dominate over others, like the economy for Marx. Nor is the society split into opposing spheres, such as system and lifeworld, on normative grounds as in Habermas's theory of communicative action. Moreover, classical dichotomies, such as the one between actor and structure, can be avoided. Instead, systems theory guides us to analyse the constant chaining of communication from a level ground.

A recent debate on inequalities in gambling offer focused on the underlying reasons for the growth of gambling globally and the exploitation of the poor (see e.g., Abarbanel, 2017; Delfabbro & King, 2017; Livingstone et al., 2018). The frontlines of this debate seem to run along disciplinary lines, or more broadly positivist psychology against constructivist social science. Delfabbro and King's (2017) individual-centred perspective sees that for exploitation of consumers to occur, a strategic and rational enterprise would be necessary. Livingstone et al. (2018) argue instead that gambling is based on social structures and the economic logic of revenue maximisation, including market

competition and spatial distribution of demand that produce social outcomes such as inequality. Independent of the question whether such a 'capitalist conspiracy' exists, or who might be conspiring (Abarbanel, 2017), the issue can be understood and analysed as an expression of systemic mechanisms. While using widely the same literature to substantiate their points, the researchers in the debate connect the literature to 'their' systemic discourse. The systems theory exposes the processes behind such perspectives considering the respective system or contexture. Furthermore, as a second level observer, systems theory can also identify common ground (i.e. structural coupling and interdependencies) between scientific approaches, and thus facilitate multidisciplinary research in gambling. In a very practical manner, research informed by systems theory can help avoid blaming specific groups or persons. Even in comparison to other structurally inclined sociological theories such as Michel Foucault's governmentality theory, systems theory takes agents out of the equation, keeping discussion on the structural rather than on the personal level[1].

The third way in which systems theory can be beneficial to gambling studies relies on its focus on systems instead of individuals. This can be mirrored in gambling studies by focusing on gambling rather than gambling individuals. Existing theorising of problem gambling has been mainly informed by medical, psychological and epidemiological research (Young, 2013) that conceptualise and identify it using diagnostic and screening instruments. Blaszczynski and Nower (2002) have for instance described three distinct pathways to problem gambling. Although all three pathways originate in ecological factors such as availability, the gambling environment and context does not play a role at the later stages in the model. Such methodological individualism translates easily to identifying types of problem gamblers rather than types of problem gambling. While typologies of problem gamblers and their individual characteristics have importance to treatment perspectives,

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[1] See Silvast & Virtanen (2014) for details on the role of objects in systems theory.

they are less useful in terms of prevention. Prevention efforts need to account for types of gambling products, environments and supply factors, as well as their interrelations to identify risky gambling trajectories. A systems theory approach can also overcome the problem gambler / non-problem gambler division: individuals may have phases of more or less problematic gambling, making acceptable gambling connected to behaviours rather than individuals.

Luhmann's systems theory may not be the panacea of social scientific gambling research; it has its limitations and weak spots as any other theory. Luhmann's focus on complexity limits explanations of stability and order (Münch, 2004). The theory origins from a specific geographical and historic context (Germany, ca. 1970s–90s) – its applicability in 'non-Western cultural' contexts might be thus limited or at least need thorough adjustments. Systems theory also tends to neglect power hierarchies and systemic legitimacy outside the political system. For example, the theory can explain how doctors frame the world in their medical system, but it does not help in explaining why the logic of the medical system tend to be stronger than that of social work in gambling (e.g. Egerer & Alanko, 2015), or why the medical system is losing ground to growing managerialism in hospitals (Virtanen, 2015b). In this paper, we have therefore suggested Luhmann's systems theory, not to replace existing gambling research frameworks, but to complement them. This current paper has also been limited to theoretical considerations and suggestions, leaving empirical applications to further studies.

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