

# The Holes in Structural Holes Theory

## (A Literature Review)

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**Abstract**—Criticisms against structural holes theory have led to serious debates about the existence of the roles of *tertius gaudens* in managing various types of information. This research aims at mapping the fundamental debates of structural holes theory. Accordingly, the author has reviewed sixty (60) previous studies discussing structural holes theory. This study unveils three (3) holes in structural holes theory which are able to explain the metamorphosis of the roles of *tertius gaudens*. *Firstly*, concerning the weak and strong ties as the social capital. *Secondly*, *tertius iungens* as the hole of *tertius gaudens*. *And thirdly*, the role-changing strategy of *tertius gaudens* and *tertius iungens* (*nexus*). In addition, this study also reveals a potential for simultaneous roles of the two *tertius* which has never been discussed on previous studies. Therefore, further studies need to examine those multiplexity roles by conducting quantitative or qualitative network-analysis studies.

**Keywords**—*structural holes; tertius gaudens; tertius iungens*

### I. INTRODUCTION

The characteristic of the information society becomes more and more palpable. More and more people consume digital information each year. According to the research of *Ericsson Mobility Report* in 2017 [1], on average, smartphone users around the world spent 3.4 gigabytes of mobile data traffic per month, and it was predicted to increase to 17 gigabytes in 2023. Most of the mobile data were spent on accessing video content and social networking. Meanwhile, in daily life, the use of the smartphone is mostly for sending instant messages via chat applications (80%), surfing the internet (76%), sending or receiving e-mails (68%), and using social networking applications (62%). The data pattern is quite similar to that of Indonesian society. A survey of Indonesian Internet Service Provider Association (*Asosiasi Penyelenggara Jasa Internet Indonesia/APJII*) in 2017 unveiled that Indonesian Internet users spent one (1) to seven (7) hours per day for chatting application (89,35%), social media (87,13%), search engine (74,84%), accessing pictures/photos (72,79%), and downloading video content (70,23) [2].

Nevertheless, the high level of information consumption produces a multiplier effect for the users, affecting the economic values of the information itself. For the users, the overconsumption of information can lead to a high level of addiction. Shenk calls it “the modern man disease,” in which, men initially experience information starvation that they

swallow any tasty information before him, though, in fact, they need not them, which is similar to the habit of consuming high cholesterol food [3]. However, in the end, the information glut turns to lead to obesity, decreasing not only the physical but also mental health of the user. The ability of man to digest the information decreases because it has already covered by accumulated grease. It becomes difficult to differentiate which information is healthy and which is not. Furthermore, it also affects the quantity of information itself. The higher the dependency of someone to information, the higher the value of the information itself is. It has been argued by Toffler on *The Third Wave* that the character of information, that will never run out, has made it the most economic resources or raw materials to be consumed by the post-industrial society [4]. The information which is considered to have high economic value will attract and will be consumed by diverse audiences. The cycle will run continuously until it gets to a certain saturation point. Some other time, the same information (the expired one) will be reproduced to repeat a similar pattern.

In other words, any parties shrewd enough to comprehend the value of information are potentially able to control the rapid growth-rate of information in society these days. It corroborates to what has since long been predicted by Bell that the valuable commodity in post-industrial society is knowledge, namely the information itself; people who belong to the super elite (class) within society are the knowledge-information producers [3]. Therefore, it requires a manifestation of the ability to manage the information values, on the form of social capital. Unlike other capitals, the social capital is not only owned individually but also collectively through relations between interconnected parties. As mentioned in the previous cycle of information, the increase of the values of information depends on the interconnectivity of the consumers. These two words—collectivity and connectivity—are terms frequently used by the social capital theorists, especially Bourdieu, Roger & Kincaid, Coleman, and Putnam [5, 6]. However, on the contrary, structural holes theory contests the proposition by offering the concept of *tertius gaudens*, the intermediary of information which is able to maximize his social capital by exploiting the benefit/profit from the disconnectivity between parties. Because of these fundamental differences, it is not surprising that structural holes theory is often considered not to be part of the theories of social capital [7]. This paper endeavors to explain the concept

of the disconnectivity by performing a deep elaboration of the advancement of theoretical debates of structural holes theory, particularly the main critics against the proposition of *tertius gaudens*.

## II. THEORETICAL REVIEW

In general, the concept of social capital mostly refers to Coleman's network closure theory [6]. The theory argues that whether or not someone has good social capital is indicated by the amount of trust and acceptance from other people or actors. The more involved someone in his network, the more relationship, and interaction established between one and another, the more trust he gains. In addition to trust, a closed-network (*cohesive*) plays roles in developing the sense of responsibility of the actors, the diversity and trustworthiness of information, and the reinforcement of the group's norms. Accordingly, Rogers & Kincaid define the social capital by the term personal network integration, in which a network is viewed well-integrated when all of the members are connected, and even interlocked [6]. Meanwhile, Bourdieu & Wacquant define the social capital as the accumulation of actual or virtual resources to give added value for individuals/groups through a long-term control or ownership of network by means of relationship building in order to be acknowledged and known, either institutionally or not, formally or informally [8]. Putnam argues that the social capital is the features of a social organization (such as norms, beliefs, and networks) which can improve the efficiency of a society by facilitating coordinated-actions [9].

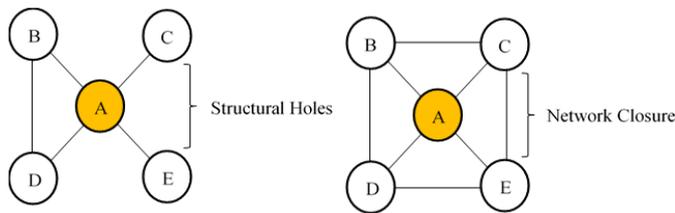


Fig. 1. Comparison between structural holes and network closure.

Unlike other previous conceptions of the social capital which emphasize the aspect of information redundancy, Burt offers the idea of the structural holes as the embodiment of non-redundant principles [6]. The theory explains that an actor A can create a network hole by cutting the information connection between several parties (such as the relation between B-C, C-E, and D-E). In other words, an actor can condition people not to receive any information from any parties, except for the actor himself as the only source of information (see Figure 1). This condition makes the people who need information (C and E) very dependent on the actor (A) who reinforces his power in controlling the information. The actor (A) can exploit the chasm of people's ignorance (B, C, D, and E), transforming it into his social capital, so that he can indirectly control their behaviors/actions, because, eventually, he is the only one possessing the power of being an intermediary (*brokerage*) in bridging the needs of people who demand the information. The actor (A) becomes *tertius gaudens*, the third party getting the benefit from the relation of people he exploits. Simmel calls such person "the third who

*benefits*," whilst Burt addresses them as "between two fighters, the third benefits/laughs" [8].

In dealing with different situations, *tertius gaudens* can apply two (2) strategies in managing information. *First*, when there is a competition between several parties in snatching the same information. This situation is beneficial for *tertius* because he can give information to one of the parties based on the highest offer (profit/benefit) so that in the end there will be parties which get the information (*win*) and there will be others who don't (*lose*). *Secondly*, when there are conflicts between several parties who desire different information. In this situation, *tertius* acts as a mediator to compromise in order to find the resolution for conflicting parties. He attempts to control the stream of information so that it can reach diverse parties. Although *tertius* plays different roles when facing those two situations, he is still able to gain profit/benefit from information, such as (1) access, namely getting the information which others don't have and selecting the unwanted information to avoid *information overload*; (2) timing, namely building relationships with the right people or certain people to whom he wants to give information in advance so that they can get the benefit in the competition; and (3) referrals, namely establishing the information exchange with parties outside his internal networks [8]. In addition, the *tertius* also gains structural autonomy as the benefit/profit of his control in the networks, in which he becomes an information *entrepreneur* by efficiently and effectively creating new structural holes, increasing the number of his non-redundant contact [10].

The idea of *tertius gaudens* comes from the thought of a sociologist, Simmel, about the role of the third party [11]. Structural holes theory is also influenced by the ideas of Merton, namely the concept of *Matthew Effect* and *role-set* [12, 13]. Those ideas were then elaborated with several network theorizations appearing in sociological studies around 1970-1989, from that of Burt, that the structural autonomy formed through the network complexity [14]; Cook & Emerson in the power of having colleagues/partners by exclusive exchange; Freeman, the theory of strength of weak ties from the ideas of Granovetter [15]. The theory assumes that one gets more important information, rather, from people who rarely communicate with them (occasionally), or what is called weak ties.

## III. METHODS

This study uses the literature review as data collecting method, following these two (2) steps: *Firstly*, literature searching through reachable academic data sources, namely the library of Universitas Indonesia (online and offline), Google Scholar, and ProQuest Database (such as scholarly journals, dissertation and theses, conference papers and proceedings). The searching process was performed from early Mei to late July 2017. In order to narrow down the search result, the author uses the keywords "*structural holes*", "*tertius gaudens*", and "*tertius iungens*". Those three keywords have led to 43,395 research documents studying structural holes theory in a variety of contexts. *Secondly*, due to the high number of researches found using the keywords, the data are sorted and selected in accordance with the theme and the needs/goals of

this research. However, further filtering process must be conducted since there are plenty of the research documents which have never been officially published and have not yet been referred to the original structural holes theory, resulting in sixty (60) studies discussing structural holes theory, either empirically or non-empirically.

TABLE I. SEARCH RESULTS OF STRUCTURAL HOLES THEORY LITERATURE

Online/offline Sources	Keywords Search (conducted on May-July 2017, using "...")		
	Structural Holes	Tertius Gaudens	Tertius Iungens
Google scholar	32.221 documents	2.290 documents	1.450 documents
ProQuest database	6.911 documents	277 documents	239 documents
Universitas Indonesia library	3 + 3 documents	1 document	0 document

#### IV. FINDING AND DISCUSSIONS

After examining sixty (60) previous studies of structural holes, the author unearths three (3) main holes illustrating the map of discussions and critics against structural holes theory which has been advancing and convoluting along the course of time, namely: (1) the strong ties in *tertius gaudens*; (2) *tertius iungens* as the alternative to *tertius gaudens*; and (3) the strategy of role exchange between *tertius gaudens* and *tertius iungens* on structure and/or process.

##### A. The First Holes: The Strong Ties in Tertius Gaudens

Among the sixty (6) studied pieces of research, thirty-eight (38) of which discuss the difference of the actor's position in the network, either explicitly or implicitly. Other seventeen (17) studies show that the position of the different actor on the structural holes (weak ties or closure networks) or *tertius gaudens* are more beneficial and profitable compared to the actors whose positions are in the tie/network's cohesivity. Below are the network advantage one can obtain; (1) medical innovation diffusion through the process of structural equality [16]; (2) improving the social capital value by decreasing the number of competitors [15]; (3) the ability to adapt with new tasks and to promote new working cooperation with outsiders [17]; (4) reading and expressing better ideas [18]; (5) increasing the managerial performance holistically [19]; (6) facilitating a relation by becoming an intermediary [20]; (7) increasing the informal power and trust in advise-seeking network [21]; (8) reducing private budget in order to increase team's productivity [22]; (9) shaping ideas and identifying strategic intermediaries [23]; (10) increasing coding performance [24]; (11) identifying the chance of intermediary [25]; (12) resolving conflict by becoming the cultural boundary spanner [26]; (13) improving the coordination and collaboration between a number of research teams in order to become more successful in inventing [27]; (14) improving the connectivity between the core-industry sites of tourism with different characteristics [28]; (15) widening the contact coverage by acting as the bridge [29]; (16) becoming hub/center of information access which is moderated by the social status/position of the intermediary [12]; and (17) keeping

the economic balance of tourism domain through the management of policy, resources, and tourist infrastructure [30].

In contrast, there are seven (7) research findings which discuss *tertius gaudens* in rather negative manner, though they also say that it has positive benefits for the network density/closure, such as (1) network status, network density, and the low network firewall can give investment incentive in order to increase the performance of a bank [31]; (2) increasing the social capital instead of exploring the structural holes for the sake of stability, expansion, and the tenacity of long-term goals [32]; (3) the distance proximity and *homofili* (the similarity of culture, age, education, salary, organization, kinship) determine the vast and strong communication fabric [33]; (4) the structural holes covered by the company are negatively related to the number of patented innovation [34]; (5) a close friendship with the manager of the competing hotel can increase the performance/income of the hotel, especially during peak seasons [35]; (6) a team leader which acts as an intermediary (*tertius gaudens*) rather causes the bottleneck to the information stream and decreases the productivity [36]; and (7) decreasing the number of conflicts and improving the continuity of the group [37].

Meanwhile, other fourteen (14) research findings are rather neutral, accommodating the strengths and the weaknesses of the role of *tertius gaudens* in many different contexts, and attempting to offer other benefits which are significant in complementing the weaknesses. The findings are: (1) obtaining new information about job vacancy as a result of bridging the weak ties [38]; (2) positional and relational approach in the network structural model [14]; (3) the structural holes have positive effect for information and resource ties, yet they have the negative effect to the bond of identity and expectation [39]; (4) clique network, *entrepreneurial* network, and hierarchical network in the structure of social capital network [40]; (5) the elaboration of network closure and structural holes in the aspect of internal/external network firewall, performance, and the integration of similar/different groups [41]; (6) boundary crosser (*boundary spanning*) evokes innovative ideas as well as detaining the diffusion and the application of the ideas [42]; (7) binding/cohesive social capital and connecting/bridging social capital [43]; (8) the synergy between network cohesivity and structural holes intermediary (*shortcut*) can evoke and produce innovation [44]; (9) the collaboration of strong and weak ties can integrate the knowledge [45]; (10) related to the high level of team performance, today's intermediary bond is more effective than that of the past [46]; (11) the boundary crosser is positively related to the quality of the team, but negatively related to the productivity of the team [47]; (12) integrating the strong ties and the weak ties into network diversity which is beneficial for work improvement [48]; (13) unable to improve team performance individually, but able to improve team performance in general [49]; and (14) the strength of the tie is positively related to the productivity if moderated by the centrality of intermediary and structural holes, yet negatively related when (everything is done) directly [50]. These findings show that in a certain condition, *tertius gaudens* does not only create weak ties by cutting the direct connection (*alter*), but also act collaboratively, coordinatively, and cooperatively in

order to create strong/firm tie so that it can get the maximum benefit from the network. It is what triggers debates and critics towards the next structural holes.

### B. The Second Holes: *Tertius Iungens* as the Alternative

The next debate is about the role strategy and the behavior of *tertius* when facing different situations in the network. Baker & Obstfeld criticize structural holes theory because it fails to notice the fundamental idea of Simmel about the role of the third party as an intermediary or nonpartisan [51]. They argue that *tertius gaudens* are only one of the strategies of the third party (*entrepreneur*) in facing the competitive market on the inter-organizational level through contact separation (*disunion*), the nonexistence of *tertius*, tenuous and individualistic, rather formal, and slightly redundant network shape. When facing the similar work situation, *tertius* should have the unifying strategy (*union*) through collaboration and mediation, reciprocal exchange (reciprocal and trust), firm/tight and collective network, rather informal, and much redundancy (see Figure 2).

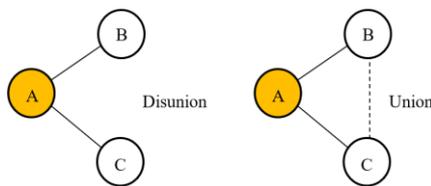


Fig. 2. Illustration of disunion and union strategies.

Afterward, Obstfeld elaborates the concept by introducing the concept of *tertius iungens* (the third who joins), as the alternative strategy which is in opposition to that of *tertius gaudens* [52]. By consistently referring to the ideas of Simmel, *tertius iungens* is the third party which acts as the mediator (nonpartisan), in order to create or defend the unity of his group [11]. The third party produces reconciliation and harmony between the two conflicting/fighting parties, from which he can retreat himself after successfully creating a direct contact between the two parties (or more) which previously has been cut—because they have been in conflict, or becoming an intermediary (arbiter) which is able to balance the conflicting claims and eliminate incongruity or incompatibility within it [11]. However, the activity of *tertius iungens* often involves coordination even though they are not in the state of conflict or disagreement where there are hostility and competition. In other words, the parties which want to coalesce or unite might have different interests, possessing the equal or similar interest without any strong ties because they are aiming at certain practical goals.

The strategy of *tertius iungens* is discussed either explicitly or implicitly on many previous pieces of research. There's only a handful of researches which explicitly state the strategy of *tertius iungens* in their study, whereas the rest of the studies talk about it implicitly. Besides *tertius gaudens* and *tertius iungens*, Long *et al.* through a literature study have found a number of terms for the intermediary/third party [53]. Meanwhile, the review of researches which implicitly discuss the strategy of *tertius iungens* have led to these findings: such

as: (1) the grouping of the five role type of the intermediary [54]; (2) intermediaries' technological steps [55]; (3) the strategy of separation and unification [51]; (4) passive and active *tertius gaudens* [56]; (5) the application of the theory of balance in structural holes resulting at the hypothesis of division and collaboration [57]; (6) the opinion leader is polymorphic, connector, and multilevel who depends on strong tie [58]; (7) the intermediary uses cellphone to bridge the relations [59]; (8) decreasing/eliminating the structural nonholes in conflict situation [60]; (9) the strategy of knowledge acquisition and integration and external network alliance [61]; and (10) the dominant political intermediary is the member of coalition party having the highest number of "clicks," high formal position, broad relationship, and accentuating collectivity [62].

Meanwhile, most of the research whose analyses involve the term *tertius iungens* show that it has positive benefits in different situations. The orientation of *tertius iungens* has a positive correlation to the involvement in innovation [52], relational commitment [63], as well as in the activities of knowledge sharing in social media [64]. The strategy is fit for the process of collaboration in order to unite diverse stakeholders of the company [65], and can as well be applied in the communication strategy of public relations through dialogical approach [66]. In order to be able to be fully applied, the strategies of *tertius iungens* can be integrated with the strategy of *tertius gaudens* when facing the ambiguity in the creative production process [67], or when used by the agents in linking the connection between cinematographer and production house [68]. It means that the two strategies can be applied dialectically without having to be dependent on the network structure. An intermediary can play a double role in reinforcing the two strategies simultaneously. It is what has attracted the network experts and has triggered further debates and discussions.

### C. The Third Holes: The *Tertius* Strategies of Role Exchange

The further debates are about the strategy of role exchange of *tertius* because of the existence of the brokerage structure and the condition of network instability. Referring to the assumption of DiMaggio, Obstfeld *et al.* [13] argues that becoming a third party or intermediary is a process (*brokerage process*) which will be more productive if separated from the network structure, particularly the structural holes (see Figure 3). The process is called conduit brokerage, namely the intermediary which only acts as the channel in sending/receiving information, without attempting to change the existing direct connection [18, 52]. This intermediary emerges due to these two (2) main arguments: (1) the intermediary can appear in various, wide structural context, including the open and closed network; and (2) the motivation and opportunity of becoming intermediary (*entrepreneurial*) should be divided, not corresponded or unified, because the opportunity of becoming an intermediary only exists around the actors having the motivation to become an intermediary. Therefore, the actor who does not have the motivation to be an intermediary will not get the opportunity of becoming an intermediary. It means that even though the structural pattern gives many chances of becoming different kinds of

intermediaries, in the end, the result will be determined by the motivation and the intention of the actor himself, whether or not he wants to catch the opportunity. The intention usually has something to do with the benefit and short or long-term access, and individual or collective goals. The opportunity of the intermediary illustrates the availability of actors and resources which can complement each other, usually by recombining the resource in order to create cultural dan technological innovation which can not necessarily be affected by the structure. The social network structure can indeed influence (the probability of) the act/behavior of the intermediary, but it can not absolutely define the behavior. This study proposes the reconceptualization of the definition of intermediary by emphasizing on the social process occurring in the context of social network independently.

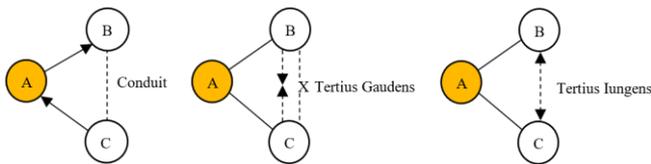


Fig. 3. Three forms of brokerage process.

In addition to the network structure, the network instability also forces *tertius* to metamorphose in playing the strategy of managing information. Sasovava *et al.* uncover the importance of the dynamics of intermediary in maintaining the stability of a particular network, or network churn [69]. They observe that the intermediary having the high self-monitoring characteristic is potential to improve the new friendship and, therefore, is able to increase the number of new structural holes. The intermediary attempts to be *tertius gaudens* and *tertius iungens* simultaneously, namely by consistently trying to maintain the old structural holes and, simultaneously, attempting to close the holes of the old structure. Burt *et al.* also come across similar findings, that there is a continuing density (*serial closure*) in the form of series/orders of involvement, or the involvement (*structural holes*) of the closed and open network which keep changing all the time and, rather, is more beneficial than the stable/consistent closed network [70]. In addition, Quintane & Carnabucci also discover that there are brokerage process and temporary structural holes [71]. There is a tendency of an intermediary to adopt the strategy of *tertius gaudens* when involved in the interaction with people with whom he is unfamiliar and whom he knows in short-term (*unembedded brokerage*). On the contrary, the intermediary also tends to adopt the strategy of *tertius iungens* when interacting with people whom he knows well in a long-term interaction (*embedded brokerage*).

## V. CONCLUSIONS

Based on the identification of three (3) holes above, several conclusions about structural holes theory are drawn. *First*, strong tie (network closure) and weak tie (structural holes) are not dualistic and separated information management strategies (*dichotomy*), but, rather, dialectic and complementing each other (*complimentary*). *Secondly*, *tertius gaudens* must metamorphose into *tertius iungens* or other roles of *tertius (nexus)* so that he/she can adapt and face the

various everchanging condition and situation, especially in the era of information and communication technology which grows rapidly these days. *Thirdly*, the instability or network fluctuation (*network churn*) is required to force *tertius* to improve his ability to a higher level. These three conclusive propositions need to be reflected on further studies of structural holes theory, especially concerning multiplexity ability in using the *tertius* strategies simultaneously due to his attribute of heterogeneity, namely resources, skills, and motivations/goals. This research has not yet been able to analyze and reach all of the studies concerning structural holes, considering the significant amount of studies found in the process of literature data collecting.

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