



**THE FOUNDATION OF PEACE ECONOMICS IN THE THOUGHT OF
KENNETH BOULDING**

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CESPIC WORKING PAPER
2024/02

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Abstract: *The topic of this essay is the "triangular theory" of social systems as articulated by Kenneth Boulding. This theory encompasses the role of three systems: exchange, threat, and integrative systems. It can be considered the foundation of peace economics because it comprehensively highlights: (i) the pernicious and costly characteristics of threat systems, particularly their intrinsic instability in the long run; (ii) the detrimental effects of threat systems on economic development; (iii) the key elements of integrative systems; and (iv) the existence of a stable peace as an optimal state that is conceptually distinct from deterrence due to the dominance of integrative systems over both exchange and threat systems.*

Keywords: Kenneth Boulding. Peace economics, Conflict, Threat, Love, Integrative systems, Power, Instability.

Jel Classification: B31, D50, D64, D74.

1. Introduction

On October 5, 1962, the Beatles released their debut single "Love Me Do," and one month later, it reached No. 17 on the English singles chart. Few would contest that this marked a turning point in the history of the modern world. We must assume that in those months, there was a flourishing of seeds of inspiration that had taken root in Liverpool because, coincidentally, only a few weeks later, on December 29, 1962, another Liverpudlian, Kenneth Ewart Boulding, gave a talk entitled "The Economics of the Threat Systems" at the 75th meeting of the American Economic Association, which can be considered a groundbreaking milestone in the study of peace economics. The core of this paper took inspiration mainly from it.

Kenneth Ewart Boulding (1910-1993) was born in Liverpool, he began his career at Oxford before moving to the United States, where he spent his entire professional life. Starting from the late 1940s, Boulding became a well-known and respected economist, ultimately receiving the John Bates Clark Medal in 1949 and serving as President of the American Economic Association in 1968¹. Despite his reputation as a skilled and ingenious economist, it would be limiting to confine Boulding's intellectual stature within the domain of economics. He devoted himself to promoting interdisciplinarity and the integration of social sciences. Ultimately, it would be more appropriate to consider Boulding as a complete social scientist and due to his constant attention to other disciplines, he presciently anticipated many of the current interests in economic science.

Boulding stood out not only for the originality and depth of his work, but also for his unique and unmistakable style. It is indeed challenging to find among his works detailed analyses that strictly adhere to traditional economic analyses. Boulding's writings have a captivating and brilliant style, at times naive and irreverent, occasionally infused with poetic or biblical verses. While his insights were rigorously grounded and scientifically robust, his demonstrations appeared sometimes incomplete and fragmented. Many of his numerous articles were often structured as unorthodox proceedings, diverging from the formal conventions of economic science².

Boulding's entire theoretical body of work provided the foundation for his consistent focus on peace economics, peace science and conflict resolution. To understand his persona as an imaginative economist, epistemologist, peace scientist, and versatile intellectual, it is essential to acknowledge that Boulding was deeply motivated by his Christian faith, particularly his Quakerism. As attested by Mott (2001), Boulding was the only serious candidate for both the Nobel Prize in Economics and the Nobel Peace Prize.

As noted above, the subject of this brief essay is to provide a concise overview of one of the lesser-known aspects of Kenneth Boulding's thinking³, namely his 'triangular' theory of social interactions, in which he incorporated his reflections on exchange, conflicts, and mechanisms of integration in human and social relationships. Among the various components of the Liverpudlian economist, Boulding's triangular theory of social systems is the one that has received the least attention from scholars.

Hereafter, I will focus mainly on the article 'Towards a Pure Theory of Threat Systems,' published in the *American Economic Review* in 1963, and the book *The Economy of Love and Fear*, published in 1973. These works are where Boulding's theory of grants economy and the social triangle receives its most comprehensive exposition. In general, the rediscovery of Boulding's theoretical reflections on social systems is particularly important today, as economic literature increasingly emphasizes the role of both formal and informal institutions in development and economic growth.

Despite Boulding's recognition following the publication of *Conflict and Defense* in 1962 for his work on peace and conflict resolution, the triangular theory may be more accurately regarded as the cornerstone of peace economics. First, it highlights the pernicious and costly characteristics of threat systems, particularly their intrinsic instability in the long run. Second, the theory explains the detrimental effects of threat systems on economic development by focusing on the allocation of resources, which derives from the system's characteristics—namely, the intensity of threat, exchange, and integrative aspects. Third, it identifies the main elements of integrative systems.

¹ Boulding also served as the president of the Society for General Systems Research (1957-1959), the International Peace Research Society (1969-1970), the International Studies Association (1974-1975), and the American Association for the Advancement of Science (1982-1983).

² Boulding published over a thousand articles and forty books. For a detailed description of his work and the topics he addressed, refer to Boulding (1989b).

³ For more accurate descriptions of Boulding's entire theoretical body of work, refer to, among others, Silk (1978), Troub (1978), Khalil (1994/1996), Solo (1994), Rapoport (1997), and Mott (2001). Boulding's better-known contributions are attributed to other themes, namely: his evolutionary approach to economics, ecological and sustainable development issues, interdisciplinary studies of complex systems and cognitive processes.

Specifically, the existence of integrative systems depends on unilateral transfers—referred to here as grants—between the agents involved, the asymmetry of information, and the interdependence of utility functions. Finally, it emphasizes the existence of an optimal point—a stable peace—that is conceptually distinct from deterrence. In this way, Boulding paves the way for a definition of positive peace. This paper is structured as follows: the first section presents the main principles of grants economics. The second section briefly introduces the triangular theory of social relations. The third section attempts a more formal interpretation of the insights stemming from Boulding's triangle. The final paragraph summarizes the main points and briefly discusses some implications for the evaluation of economic policies and systems.

2. Beyond exchange: the grants economics

One of the starting points of Boulding's theoretical reflection is contained in a brief essay on the nature of philanthropy (Boulding, 1962a). Boulding considers that economic relationships are not limited to bilateral and voluntary exchanges mediated by price, which lead to simultaneous changes in the utility of agents. In fact, there are a large number of unilateral relationships not mediated by any price. These were traditionally ignored by economic analysis. Boulding writes [...] *In a single transfer or gift, however, there is no price, for nothing is given in exchange. The economist, hence feels rather at sea. When he finds himself in an area of social life which is apparently priceless, he hardly knows what to do [...]* (1962a, p. 57). In short, according to Boulding, economic analysis is flawed when it does not take into consideration that human and social interactions do not exclusively manifest as exchange relationships mediated by a price. In its purest form, exchange systems are traditionally characterized by at least two agents, A and B, exchanging voluntarily a good X and this interaction is mediated by a price. In addition, utility of agents change simultaneously. Real-world economic relationships do not always adhere to this pattern. The heavy role of unilateral transfers in economic relationships prompts Boulding to systematically analyze the phenomenon of unilateral transfers and, consequently, to coin the term *grants economy*⁴. These reflections followed a decade in which he had attempted a critical reevaluation of certain foundations of economic science⁵. As mentioned, the common element in relationships not reducible to traditional exchange is the existence of unilateral transfers (grants). Broadly speaking, unilateral grants are inherently 'economic' choices because they employ scarce resources and alter the utilities of economic agents. Unlike exchanges, grants could result in changes in the utilities of agents that are not simultaneous.

Boulding identifies three different sources that give rise to a unilateral transfer: (1) love; (2) ignorance; (3) fear. [...] *One of the paradoxes of the grants economy is that it arises out of three quite different sources, which we might describe very briefly as love, fear, and ignorance [...]* (Boulding et al., 1972, p.21). In the first case, an agent A transfers a portion of their wealth to agent B because they feel benevolent towards the latter. A's willingness to part with a portion of their wealth descends, in more formal terms, from the interdependence or convergence of utility functions. Parents transfer to their children because they feel that the improvement in the children's utility coincides with the enhancement of their own utility.

Another source of grants is the asymmetry of status between two participants in an exchange relationship. Boulding links status asymmetry to the ignorance of one of the two agents. In this sense, he somewhat confusingly refers to the idea that informational asymmetry between two parties in an exchange relationship creates a distortion of the price system in favor of the party with superior information, as well as the fact that inequalities and power asymmetry between parties systematically create an advantage for the stronger party. Grants born out of ignorance result in exploitation, and indeed, Boulding defines them as 'exploitative' along with those born out of fear. The latter constitutes the third source of unilateral transfers. The classic example is the threat made by a bandit, summarized in the expression 'your money or your life.' In this case, the unilateral transfer made by the threatened party takes the form of extortion. The utility functions of the two agents are clearly interdependent but will not tend to coincide, as in the case of the parent-child relationship.

This type of relationship sheds light on an additional classification that Boulding presents regarding grants. Grants are distinguished as positive and negative. That is, there could be unilateral transfers of negative sign. A negative grant is a negative

⁴ The grants economy is expounded in depth in Boulding (1973), Boulding et al. (1972), Boulding (1978) and Boulding (1989a). Earlier works which bring together a series of arguments are Boulding (1962a), Boulding (1962b), and Boulding (1963), as well as in some essays collected in a single volume (Boulding, 1969).

⁵ The main works from that period are Boulding (1934), Boulding (1944), Boulding (1948), Boulding (1949), Boulding (1950), Boulding (1952), and Boulding (1953).

unilateral transfer towards another agent. In this respect, afterwards when analysing the threat systems, it would be clear that a threat is nothing but a 'negative grant'. In the presence of negative transfers, the utility of both A and B will decrease. In fact, agent A will incur a cost whereas the negative transfer decreases the utility of the recipient B.

Unilateral transfers can be explicit or implicit. Needless to emphasize the nature of explicit grants. However, there are grants that are not perfectly distinguishable, and therefore, Boulding defines them as 'implicit.' The discussion regarding 'implicit' grants is presented by Boulding in the fourth chapter of *The Economy of Love and Fear*. He himself does not hide the difficulties of adopting a precise definition of implicit grants: [...] *The great problem in defining implicit grant is that the concept always implies some norm or reference point in the distribution of income or wealth, divergences from which constitute the implicit grant structure. [...]*"(Boulding,1973, pp. 49-61).

Implicit grants are, therefore, any redistribution of wealth or income that takes shape in the presence of a distortion of the price system or as a result of specific economic policies. For example, a monopoly creates a positive grant in favor of the monopolist and a negative grant against the consumer. Similarly, the imposition of tariffs creates a grant in favor of the benefiting businesses and a negative grant to the detriment of consumers. Therefore, it seems that Boulding defines both consumer surplus and producer surplus as implicit grants. A negative implicit grant in favor of a monopolistic firm capable of distorting the price system would represent a positive implicit grant for the firm and a negative grant to the disadvantage of the consumer. A special case mentioned is that of the black market. It is interesting to note that this had already been analyzed in Boulding (1947).

Although an explicit definition of the concept of 'implicit grant' was absent in this article, the discussion regarding the prices that emerge in the black market contains in essence all the elements that will later be found in the conceptual development of implicit grants. Conversely, later on, the black market becomes a kind of category into which some of the real phenomena that give rise to implicit grants are included. Explicitly, Boulding writes: [...] *Quantitative restrictions in price and wage control almost inevitably produce "black markets" where exchanges take place either in illegal quantities or at illegal prices or wages. [...]* (Boulding, 1973, p. 55).

From this point onward, however, the discussion will consider explicit grants and the theoretical framework in which Boulding has analyzed and explained them in the social triangle.

3. The Three Forces Organizing Society: The social Triangle

Understanding the Boulding's grants economy is therefore essential to the comprehensive vision Boulding has on the three forces that organize society: (1) exchange; (2) threat; (3) integration. Boulding writes: "*I recognize three major organizers in society. An organizer is something like a social gene. It is a relationship which organizes role structure in society and hence is capable of developing organization. I distinguish three of these organizers. I call them the threat system, the exchange system and the integrative system*" (Boulding, 1968, p.43).

"It is important to note that both threat and integrative systems can only be fully understood by considering the existence of grants. In other words, both systems differ significantly from the exchange system in that they share three key characteristics: (i) they are not anonymous; (ii) they are structured around various types of grants; and (iii) changes in agents' utilities are not simultaneous. Beyond these general elements, other factors differentiate the two systems, leading to distinct social outcomes. Boulding constructs the social triangle based on the existence of unilateral transfers and their various sources. Impersonal exchange in its purest form is an abstraction; in reality, it does not encompass the full range of human and social relationships. Threat, power, and subjugation coexist alongside generosity, reciprocity, and sharing in the lives of individuals, as well as in interactions within organizations and social bodies. This theory can be applied to rational agents, providing a foundation for peace economics.

3.1 Threat Systems: Conflict and Power

In threat systems, the interaction between A and B occurs in the shadow of conflict and threat. From a static perspective, it also materializes in a power relationship between the parties. Agent A is capable of constraining and directing the choices and behaviour of B under the threat of a credible reprisal (the common example being 'your money or your life'). It is necessary to clarify that the existence of a threat does not negate the voluntariness and choice of subject B. It is also clear that the intensity of the threat modifies the voluntariness of actions. The set of possible choices for B shrinks. As Basu

(2007) has pointed out, in the presence of a threat, voluntariness does not disappear but is diminished. In the extreme case of 'your money or your life,' a rational agent will probably choose voluntarily to stay alive and allow themselves to be robbed. This behaviour still constitutes a choice. The existence of a threat, by negatively altering the possible choices of agent B, contributes to creating a form of power for A over B. Put differently, Freedom and coercion may be interpreted as the extremes of a continuum in a power relationship of A over B. In other words, they are the extremes of B's set of choices, where freedom is represented by an (potential) infinite set of choices and coercion by a single point of choice. The greater A's power, the smaller B's set of choice and in turn the lower their voluntariness.

This conceptual distinction between lack of voluntariness and coercion is important because it allows for the development—albeit only in intuitive terms—of a way to measure the power relationship of A over B. In other words, the extent to which A's threat reduces the set of possible choices available to B at a given point in time serves as an—albeit imperfect—measure of A's power over B. However, this distinction does not exhaust the conceptualization regarding a situation of subjection and threat, particularly concerning its evolution over time. Power and the evolution of threat systems depend primarily on the choices and reactions of the threatened party, B. In Boulding (1963), four possible reactions are presented: (1) submission; (2) challenge; (3) counter-threat; (4) integrative response. Submission is a common reaction in threat systems and takes the form of continuous conflict between the involved parties. [...] *The threat-submission system is likely to be a conflict system; That is it is likely to move the parties to a state in which the threatener is better off and the threatener is worse off than in initial condition.* [...] (Boulding, 1963, p. 426). The dynamics of threat-submission clearly improve the situation for A and worsen the situation for B. It is appropriate to note that this type of result, although plausible, is still preferable to a result generated if A carries out the threat. Consider ourselves again in the previously mentioned 'your money or your life' situation. If I submit to the robber's demand, I would end up in a worse situation than initially, but at the same time, better than if I had chosen not to submit to the robber's threat. Boulding also emphasizes how the threat-submission dynamics are particularly evident when agent B considers agent A legitimately capable of exercising that specific threat. A citizen/taxpayer submits to taxation or prohibition by the State because they consider it legitimate, even if taxation or prohibition reduces their well-being. The example of the threat between parents and a child is also useful in understanding another aspect of threat systems, namely credibility. A mother threatens the child with a phrase like "don't steal the cookies, or I'll kill you." This statement is clearly not credible because the threatened punishment is not appropriate for the situation. Despite the lack of credibility, the threat can still be effective because the reaction of the threatened is based on the legitimacy of the one making the threat. Thus, a mother baking cookies, the State imposing a tax, or requiring the forced enlistment of young people may receive a submission response if they are both legitimate and credible. As will be seen later, legitimacy is a foundational element of integrative systems, but Boulding still mentions it as an element that can strengthen the credibility of threats. As Schelling (1960) also emphasized in those years, credibility is indeed the most important element of a threat system.

Credibility plays a fundamental role when the second of the threat reactions identified by Boulding occurs, namely, the challenge. The threat/challenge dynamic is clearly an interaction in which both participants lose, meaning it is a zero-sum game. In fact, when the threatened party responds with a challenge to the threat, it imposes a cost on the one who issued the threat, who must then decide whether to carry out the threat or not. [...] *defiance puts a burden of response on the threatener and hence is in some sense a challenge for him. The threatener then has to decide whether or not to carry out the threat. If he does carry out the threat, this is likely to have a cost to him.* [...] (Boulding, 1963, p.428).

If the threat is not carried out, the credibility of the entire threat system is compromised⁶. Another possible reaction to a threat is a counter-threat. The threatened party can respond to a threat by issuing a new threat. This situation is also referred to as 'deterrence,' emphasizing static aspects, or 'arms race' when highlighting dynamic aspects. One of the fundamental characteristics of threat/counter-threat interactions is

⁶ In particular, to highlight the problematic nature associated with the credibility of any threat, Schelling wrote, [...] *the threat is a surrender of choice, a renunciation of alternatives, that makes one worse off than he need be in the event the tactic fails [...]*" (Schelling, 1960, p. 123). On the relationship between Schelling and Boulding, see an interview with Schelling published in Carvalho (2007). Moreover, it is well-known that interest in the theme of conflict was spreading among economists during those years. As evidence of the emergence of this trend, one could consider a review by James Meade published in the *Economic Journal* in 1963, dedicated to Boulding (1962b), Schelling (1960), and Rapoport (1961). See also Harsanyi (1962).

the intrinsic long-term instability. Boulding had analysed in depth the roots of long-term instability in his volume *Conflict and Defense* released also in 1962. He was influenced by the pioneering work of the mathematician Richardson (1960) - also a Quaker - who described the instability of a deterrence-based system. In Boulding's interpretation of a deterrence situation, one of the main reasons for instability is the gradual erosion of the threat's credibility over the long term. A threat/counter-threat system, deterrence, is clearly a zero-sum game, leading to a deadlock in conflict situations⁷.

In the light of such instability, the most effective and stable response in a threat system is the integrative response. [...] *The integrative response is that which establishes community between the threatener and the threatened and produces common values and common interest* [...] (Boulding, 1963, p.430).

3.2 Integrative Systems

While the most effective response to threat systems is integrative, integrative systems, however, do not necessarily have to arise as a result of a threat. Integrative systems are defined by Boulding as follows: [...] *The integrative system is harder to define, but I think it is at least as important as the other two systems. It involves such things as status, identity, love, hate, benevolence, malevolence, legitimacy* [...] (Boulding, 1968, p.44). In integrative systems, the interaction between agents A and B takes shape through a positive unilateral transfer, namely a grant made by an agent, say A, towards B. In this case, the grant positively enters the utility function of B without B simultaneously transferring any goods or services to A. Similar to threat systems, the typical one-to-one correspondence of exchange tends to disappear. Unlike exchange, however, where the relationship between A and B directly, simultaneously, and mutually modifies the utilities of both parties, in integrative systems, a unilateral transfer can imply an indirect and non-simultaneous modification of utilities, i.e., not dictated by independent choices. The utility functions of participating agents are necessarily interdependent. Integrative relationships cannot be anonymous interactions but must necessarily be 'identified' as well as 'motivated'. Integrative relationships can be interpreted both at the micro level and in aggregate terms at the macro level. The distinctive features of an integrative system are thus distinguishable:

(i) Interdependence of Utility Functions: The interdependence of utility functions is a fundamental characteristic of every integrative system. Boulding explicitly refers to Adam Smith's lesson and the concept of empathy and fellow-feeling in this regard. In Boulding (1962a), we find the first systematic treatment of the existence of interdependent utilities.

(ii) Identity: Integrative relationships are never anonymous relationships. An integrative relationship naturally arises when two individuals identify with the same group. [...] *when two persons identify with the same group an integrative relationship of some kind, however tenuous, is established between them* [...] (Boulding, 1978, p.190). Boulding interprets an agent's identity essentially as a self-representation, that is, as a self-concept or self-image. This argument recalls those presented in one of his pioneering works, his volume *The Image*, published in 1956, which can be considered one of the first works introducing themes now addressed by scholars in cognitive economics. Each agent possesses a self-representation that depends on their spatial location (spatial image), temporal location (temporal image), the feeling of belonging to a stable fabric of relationships (relational image) in which the individual recognizes their role (personal image). An individual also has their own set of values that contribute to translating information from the external environment ('value image'). Finally, there is the public image, which presents differences between elements that are socially shared and those strictly individual. Boulding writes exemplifying: [...] *I visualize myself as a husband, father, grandfather, resident of Boulder, citizen of both Colorado and the United States, economist, professor, member of the university faculty, Quaker, recorder player, author, lecturer, and so on and so on. In each of these roles I relate to a different group, social structure, or organization and behave somewhat differently in each role* [...] (Boulding, 1978, p.190). Boulding, although not deepening this discourse later, suggests the idea that each individual has different representations of themselves and, therefore, a series of distinct identities albeit with common traits. The various identities simultaneously have significant social value, forming the foundations on which integrative relationships are structured. For this reason, Boulding extensively addresses them in analyzing integrative systems compared to threat systems. The construction of a stable integrative system (groups, communities,

⁷ Deadlocks are more destructive in the long run because the amount of resources allocated to threats and conflict is greater (Caruso, 2007).

societies) cannot therefore be separated from the establishment of a series of publicly shared images. ' [...] *The image not only makes society, society continually remakes the image. [...] The basic bond of any society, culture, subculture, or organization is a "public image", that is an image the essential characteristics of which are shared by the individuals participating in the group. [...]*' (Boulding, 1956a, p.64). Identities built on images contribute to the persistence over time of integrative systems. This stems from the fact that each individual's self-representation does not easily change.

(iii) Legitimacy: Thirdly, one of the characteristics of integrative systems is the legitimacy of the agents involved. In other words, in an integrative relationship, an agent must perceive the other agent as legitimate. The sense of legitimacy, which—as seen earlier—is also characteristic of threat systems according to Boulding, finds its most fruitful expression in integrative relationships that give life and ensure the stability of communities and organizations.

(iv) Reciprocity: Integrative relationships are characterized by reciprocity. Boulding writes: ' [...] [...] *This may look very much like exchange, as it usually involves a two-way transfer, sometimes separated by an interval of time, of commodities or exchangeables between two parties. It is different from exchange, however, in that whereas exchange is conditional and is based essentially on the acceptance of a conditional offer, reciprocity is formally unconditional, [...] Thus, reciprocity can be defined as mutual grants or a pair of grants [...]*' (Boulding, 1973, p.26). Boulding clearly interprets unconditional reciprocity as the only form of reciprocity that is truly fruitful in establishing stable integrative relationships.

(v) Asymmetry in the assessment of the grant: In his late writings, Boulding introduces a characteristic aspect of integrative systems, namely the structural asymmetry in the assessment of the grant between the donor and the beneficiary. Although this aspect is to be considered decidedly significant and laden with consequences for the evolution of integrative relationships, Boulding does not address it systematically but leaves it 'between the lines.' It is particularly relevant because it manifests in reciprocity and can weaken its effect. Boulding writes: ' [...] *The gift or grant is an imperfect measure because it does not take into account the giver's estimates of the recipient's benefit, or the translation of that into the benefit to the giver [...]*' (Boulding, 1989a, p.110). And then subsequently defines its terms and identifies potential consequences on the stability of integrative relationships using marriage as an example: ' [...] *The ratio of what is perceived as received as to what is perceived as given can be called the "terms of reciprocity." These are very subjective and often unclearly expressed. [...] Because of the subjective nature of the perception of the terms of reciprocity, it is quite possible for each spouse to feel, for instance, that the terms are not very good, that each is giving a lot but not getting very much. This will create tensions. Once these go beyond a certain point they often lead to divorce [...]*' (Boulding, 1989a, p.172).

The study of integrative systems at the micro level have anticipated contributions to theoretical themes such as trust, social capital, social norms, reciprocity, relational goods, and happiness. The common denominator in Boulding's analyses and these current strands of literature is the recognition of sociality as a characteristic element in social interactions. Sociality takes shape in voluntary relationships, in the absence of coercion, and through unilateral actions, gifts. Various forms of generosity, therefore, underlie the establishment of stable integrative systems. Not by chance, Boulding suggests extending the domain of economic analysis to the 'places' where integrative relationships are more evolved and stable. Among the places where integrative relationships emerge and coercive relationships diminish, all nonprofit organizations rightfully enter, such as charities, foundations, sports associations, communities of a religious nature, or any organizations where the integrative component is predominant. ' [...] *Whether it be a casual gift to a beggar, the establishment or conduct of a foundation, the support of a religious, medical educational, and research enterprises, or even government redistributions of income, this phenomenon is extremely hard to explain using the conventional theory of exchange [...] Economics has no theory of a foundation, and no very good theory of a government as an economic organization, partly because of its neglect of the grants concepts [...]*' (Boulding, 1973, p.5). Boulding, however, also emphasizes some risks arising from integrative systems. The first risk is the sacrifice trap. A sacrifice, corresponding to a unilateral gift, that each individual can make in the interest of their identity. Boulding suggests that in some cases, unilateral gifts may not be based on pure altruism but rather on the need to respond congruently to one's identity. This can lead to excessive sacrifices that can turn into 'sacredness. [...] *The Dynamics of the sacrifice trap, however, suggest that we are constantly in danger of getting too much sacredness to the point that it is no longer a useful organizer of society and so becomes pathological. [...]* In describing this risk, it has to be understood how

Boulding, an active Quaker in his community, has in mind the integrative experience of religious communities that can lead to fanaticism with destructive profiles. Behaviours of this type are also observable in situations such as conflicts and wars where individuals are willing to sacrifice their lives. The idea of the sacrifice trap emphasizes the personal choice of an individual regarding their decisions to give/unilaterally donate in order to confirm their belonging to a group or community.

A second risk that Boulding identifies is the dependency trap, namely situations in which unilateral gifts in favor of one party come to be perceived as necessary by the beneficiary. A third trap that can be encountered in integrative systems is the ignorance trap. The trap of ignorance arises when there is no adequate information system capable of allowing individuals to evaluate the objectives and consequences of grants. Boulding writes: "[...] *the 'ignorance trap' [...] arises because of the absence of feedback and the extraordinary difficulty of developing information systems that can report the consequences of grants and so report any divergences between the objectives of grants and their actual consequences.* [...]" (Boulding, 1973, p.101). Boulding emphasizes that the latter two traps, although they can manifest in any integrative manifestation, are more significant in relationships established between an individual and social institutions created to implement economic policies in favor of individuals or social groups.

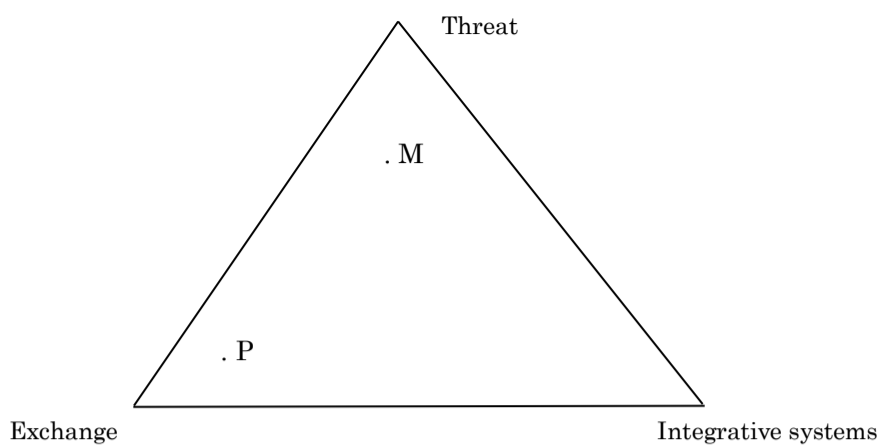
According to Boulding, integrative systems represent the most crucial social organizers. Over the years, Boulding accentuates the role of benevolence and gratuitousness to the extent of introducing the term 'love,' a concept otherwise unfamiliar in modern economic literature. When describing the power of love, he states: "[...] *Perhaps the most important single source of integrative power could be described as the capacity to love in generalized sense, which means a capacity not only to be aware both of the broader and the narrower environment around a person but also to find these environments attractive and interesting and to put a substantial value on them, especially in terms of benevolence. This means [...] the person perceives an increase in his or her own welfare when he or she perceives an increase in the welfare in some sense in the surrounding world.* [...]" (Boulding, 1989a, 115).

The characteristics outlined above become immediately clear when considering individual behaviour. However, just as with threat and exchange, the concept of integrative relations can also be applied to states or organizations. In many cases, states engage in unilateral actions, such as providing development aid or humanitarian assistance in response to global emergencies. Moreover, the interdependence between states manifests in various forms, but it is undoubtedly characterized by a range of behaviors and policies that can be readily attributed to integrative systems. Participation in international organizations is another example of integrative relations between states. Therefore, when applying this line of reasoning to international relations, it becomes evident that integrative systems are essential for the construction of peace between states. Given the inherent instability of deterrence in the long run, peace is viable only in the presence of functioning integrative systems. The construction and development of supranational institutions are manifestations of such integrative systems, even if, as Boulding points out, "[...] *we have also seen the development of areas of stable peace within the international system even without supranational institutions* [...]" (Boulding, 1967, p.12). In line with this integrative approach, Caruso (2006) presents a formal model of conflict that is enhanced to demonstrate that joining an institution through a unilateral transfer—such as a fee—to regulate exchange relationships benefits agents in terms of both economic gains and enhanced peacefulness.

4. Threat, Exchange, and Integration: The Social Triangle

In order to unify his thoughts and provide concrete interpretative tools, Boulding illustrates this idea through a triangle—the social triangle. Each point inside the triangle represents varying intensities for the elements under consideration.

Figure1. The Social Triangle



Point P, for example, is close to the maximum intensity of exchange and will likely identify a market relationship. Point M, closer to threat and coercion, will likely identify a relationship that imposes subjection and conflict between at least two individuals. The explanatory potential of Boulding's triangle can be described with a simple example: an employment relationship. This is characterized, first and foremost, by an exchange relationship in which the worker provides their time to the employer in exchange for compensation. At the same time, there is a threat relationship as the employer maintains power over the worker. In the third place, an employment contract is also an integrative relationship, as it is not uncommon for many work performances to emerge—sometimes voluntarily, such as unpaid overtime—that cannot be solely interpreted in terms of exchange, power, and threat. Different aspects of a work relationship apart from exchange have been separately analyzed. For example, in Akerlof (1982), there is an analysis of the existence of integrative relationships in employment although he underestimates the role of coercion, which does not directly appear in his analysis. Conversely, emphasis on the threat and coercion side in employment relationships is in Bowles and Javadev (2006). The authors present a model that distinguishes productive workers—who genuinely contribute to the production output of the company—from unproductive workers, employed in guard labor, i.e., roles related to control and monitoring. At this point, it is clear that the merit of Boulding's triangle lies in the fact that it integrates into a single theoretical framework both the integrative component mentioned by Akerlof and the threat and control component emphasized by Bowles and Javadev. In purely theoretical terms, this approach allows for interpreting the 'employment relationship' within a unified explanatory framework. The importance of this is immediately understandable. Although both cited studies distance themselves from the traditional view of pure exchange in neoclassical economics, any normative implications drawn from these studies could be partially misleading.

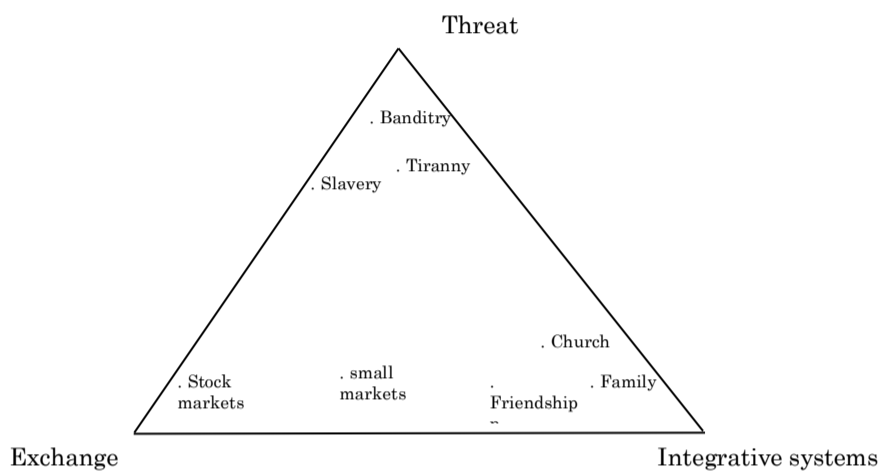
As noted above, the examples that can be provided are not limited to individuals. Consider, for instance, states. When viewed as rational unitary actors, states engage in exchange relations through international trade. However, these relations can be characterized by obstacles and barriers or be more integrated, as in the case of a free trade area or deep economic integration like that of the EU. In the first case, the interdependence between states likely features more prominent components of exchange and threat than integrative elements, whereas in the second case, the aspects of integration are more evident. There are also cases where exchange is heavily influenced by threat and conflict. Consider the case of economic sanctions. In such a context, although exchange relations exist, they are profoundly shaped by the hostile relations between countries. It can plausibly be said that a free trade area or an organization like the EU will more likely promote the expansion of exchange relations between countries, compared to a situation where they are in opposing spheres of influence, as was the case during the Cold War. Different combinations of exchange, threat, and integration correspond to different economic outcomes in terms of the balance between productive and unproductive activities (particularly destructive ones).

It is clear in Boulding's analysis that when considering relationships of threat and integration, motivated by benevolence or malevolence, the emergence and outcome of exchange appear differently. In particular, positive integrative components increase the utility derived from exchange and, at the same time, promote its occurrence. [...] *The amount of benevolence which exchangers feel towards each other need not to be large, but a certain minimum is essential. If exchangers begin to feel malevolent toward each other exchange tends to break down, or can only be legitimated under conditions of special ritual, such as silent trade or collective bargaining [...]* (Bouldin, 1969, p.6). Therefore,

market activities are strengthened through integrative relationships, while they are weakened in the presence of threat and coercion.

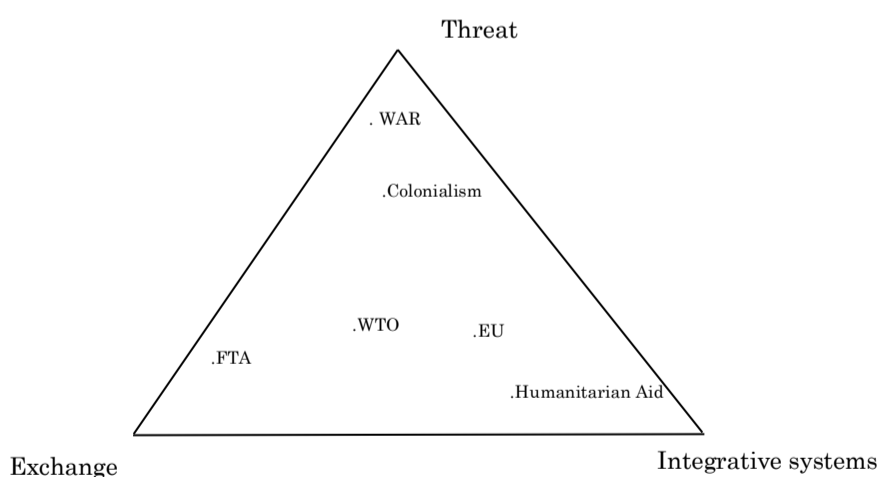
Figure 2 illustrates some illustrative combinations of threat, exchange, and integration corresponding to different institutions and relationships. It is clear that in reality, these combinations may not necessarily reflect the actual situation. Banditry undoubtedly approaches the apex where the threat system is maximum, while the family approaches the apex where love is at its highest. If we believe in the legend of Robin Hood, banditry may not only be close to the apex of the threat system but also exhibit a component of love and integration. Sadly, families can have a dark side in the presence of oppression and mistreatment by parents towards children and vice versa, thus deviating from the point where the component of love and integration is at its maximum.

Figure 2. Some explanatory scenarios in Boulding's Triangle



In Figure 3, the triangle is revisited with clearer examples concerning relations between states. In the case of a war, a threat system reaches its fullest expression. The relationship between two states is entirely shaped by the enacted threat. The colonial system was, in many cases, a threat system aimed at the expropriation of subjected populations. When considering examples of economic relations, a free trade area is certainly closer to the extreme of mere exchange, whereas an organization like the WTO exhibits much more evident integrative components. The EU, while initially established as an economic organization, has a much deeper level of integration.

Figure 3. Example of Relations Between States in Boulding's Triangle



5. Boulding's Triangle and Resource Allocation

Despite the fact that most Boulding's analysis is not precisely formal and therefore has not produced rigorous analytical tools, it provides a series of theoretical reflections that contribute to the enrichment of economic science. One could argue that Boulding's work poses a challenge to economists who wish to develop new approaches far from neoclassical tradition. In particular, Boulding's triangular vision serves as a tool to evaluate the role of institutions and the informal norms upon which they are structured, but it can also be used to assess the effects of economic policies. Indeed, if we aim to express a judgment between different social and institutional arrangements, we must use specific criteria. Economists traditionally use the criterion of Pareto efficiency or the criterion of equity. Boulding's triangular analysis, in fact, allows us to enrich the

reasoning in this regard. Firstly, based on the triangular framework, we can indeed define—at least intuitively—resource allocations that consider the different activities of exchange, threat, and integration. In this respect we can take inspiration from Ythier (2006). We initially assume that each individual i possesses a positive initial endowment e_i , and that they have the option to allocate it to: (1) exchange activities in competitive markets; (2) gifts within gratuitous relationships; (3) private consumption. Any negative quantity of a good h donated by individual i to individual j is identified by t_{ijh} . Let z be the vector of goods available to individual i after the exchange (i.e., the net difference between the goods the individual has purchased and those they have sold). A social state is therefore a vector (x, t, z) where x denotes private consumption and satisfies the identity $x = t + z$. This indicates nothing more than that final private consumption is the result of one's initial endowment, net exchange, and the difference between goods received as gifts and goods given away. If all individuals in the society behave according to a Nash-Cournot framework, they will independently choose an action defined by the pair $a_i^* = (z_i^*, t_i^*)$ that maximizes their utility. In other words, each individual will choose the allocation between gifts and net exchanges to achieve an allocation that aligns with their individual preferences. Considering also the prices, with respect to which individuals act as price-takers, a social equilibrium can then be defined as a price-action vector (p, a^*) that solves each individual's utility maximization problem given the market prices and the actions of other individuals. Ignoring the equilibrium price from this point onward, we will say that, in equilibrium, society presents an allocation of resources between gifts and net exchanges (z^*, t^*) .

Let us now assume, following Boulding's theoretical intuition, that each individual has the ability to use their resources to 'send' threats to other agents. To simplify, we can say that they use resources to appropriate others' goods through a system of threats. For illustrative purposes, from this point forward, unproductive and destructive activities typically associated with threats will be referred to indiscriminately as appropriative activities. It is also true that within this same category fall the resources used to protect oneself from appropriative activities carried out by others. In other words, a fraction of their resource endowment is employed in unproductive activities such as conflict, threat, and appropriation. We denote, for simplicity, by g_{ijh} any quantity of good h taken from individual j by individual i through threats and the use of force.

In this case, agent i will consume: $x_i = z_i + t_i + g_i$, where the last term representing the difference between the goods acquired by force and the goods that have been taken away. Thus, individuals will find themselves choosing a triplet $a_i^* = (z_i^*, t_i^*, g_i^*)$ where g_i^* denotes the fraction of resources allocated to appropriative activities. Once again excluding prices for simplicity, social equilibrium can be defined as the allocation between gifts, net exchanges, and threat or appropriative activities. We can therefore say that the previously described social equilibrium (z^*, t^*) would simply be a special case where $g^* = 0$. But would such a result be achievable? That is, could a society exist in which all economic relations are exhausted by the exchange/gift dichotomy? On this matter, Boulding clearly explains the necessity of a positive assumption for all components ($z > 0, t > 0, g > 0$). In his words: [...] *There will be some boundary within in the triangle [...] which encloses the feasible set of these three proportions. We are supposing that no society can exist without at least some proportion of all three elements and that society is unlikely to exist where the proportion of any one is excessively high [...]*"(Boulding, 1973, p.106).

Although Boulding's assertion seems to rely primarily on intuition, it should be noted that this type of social equilibrium can indeed be explained in theoretical-formal terms. Let us assume that society is composed of only two agents, A and B. If we assume that individuals behave à la Nash-Cournot, they will independently choose their resource allocation. If agent A's optimal choice is to allocate zero resources to unproductive appropriative activities $g_A^* = 0$, then agent B, with an optimal choice of $g_B^* > 0$, would be able to fully appropriate A's wealth. To give a practical example, if we had a society where no resources were allocated to policing functions, thieves and robbers, with a minimal investment of their resources in threat technologies, would be able to appropriate the total available resources. This type of outcome can be verified using the analytical tools formally applied in the expanding literature on the economics of conflict, as introduced in Hirshleifer (2001) and reviewed in Garfinkel and Skaperdas (2007).

This approach is useful for establishing criteria that allow us to evaluate which social equilibrium is preferable among various possible alternatives. A simple example can help clarify this point further. Let us consider two communities, P and W, that are organized differently from an institutional perspective. Suppose the allocation of

resources for P and W is respectively $P=(50,25,25)$ and $W=(34,33,33)$. To simplify, assume that despite the different allocation of resources, both P and W produce the same level of income $Y_p = Y_w$. Which allocation between P and W can be considered preferable? Boulding does not provide a definitive answer to this question. However, he does suggest certain criteria that help in making an evaluation in this regard. Boulding advocates for a social state in which the integrative component is predominant over the components of exchange and/or threat. This preference, although influenced by Boulding's personality and Christian faith, was also grounded in the rigor of the theoretical considerations previously discussed. As mentioned, threat systems exhibit a natural instability in the long run, which can lead to the outbreak of destructive conflicts. [...] *In estimating the cost of threat system, therefore, the probability of the actual carrying out of the threat must be taken into consideration. [...] It is easy to prove that stable deterrence is impossible in the long run, for if deterrence were really stable, it would soon cease to deter* [...] (Boulding, 1973, p.96).

In addition to the inherent instability of threat systems, there is also the recognition that resources used in threat systems are employed for unproductive purposes. These resources represent a net loss for society as a whole. The most evident case in macroeconomic terms—now widely supported by extensive literature—is that of military expenditures, which do not contribute in any way to the growth of an economic system. Ultimately, therefore: [...] *Eventually without committing ourselves to interpersonal comparisons of utility then, the negative-sum aspect of the threat system can be identified and at least conceptually measured, first in terms of the cost of all goods foregone because of the resources devoted to achieving the means of threat, and secondly, the cost in terms of any particular behaviour probability of the present value of the bads which would actually be produced if the threats were carried out.* [...] (Boulding, 1973, pp.96-97).

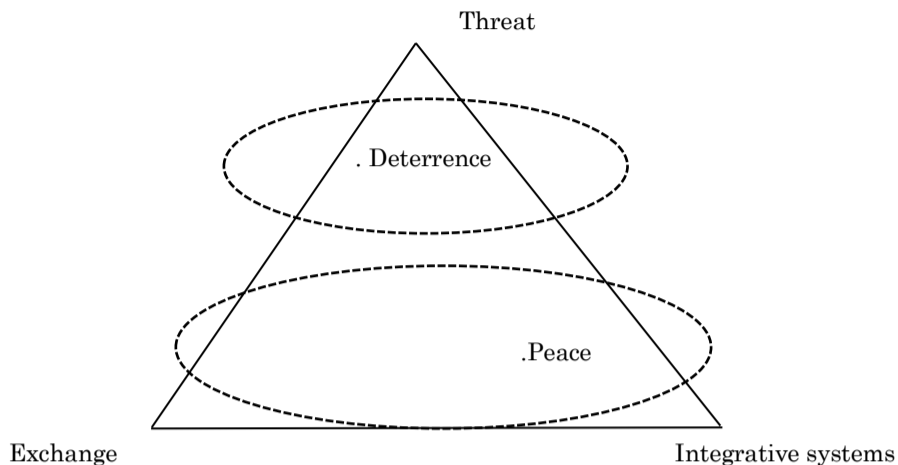
In light of these considerations, it is clear that the social state indicated by P is strictly preferable to W, despite the fact that both allocations produce the same level of income. To summarize, one could say that Boulding identifies the minimization of threat activities—i.e., the distortion in resource allocation towards unproductive activities—as the primary criterion for evaluating different social states. It is also evident that this first criterion, while simple and straightforward, does not exhaust the need for further analysis. For instance, if the social states to be compared are characterized by the following resource allocations, $M=(60,30,10)$ and $N=(45,45,10)$ the comparison becomes more complex. According to Boulding, given equal investments in threat activities, the preferred social state is the one in which integrative relationships are more developed. Boulding writes: [...] *we see a strong preference for the integrative section of society, although not so much that it would deny all value to exchange or even the threats. Other preferences would generate other patterns.* [...] (Boulding, 1973, p.109).

Boulding's preference for the point indicated in Figure 3 is based not only on his previously discussed rejection of systems of threat and coercion but also on a particular view of capitalism. Influenced by the teachings of Schumpeter, under whom he studied, Boulding views capitalist systems as inherently unstable and incapable of acquiring the necessary legitimacy. He writes: [...] *The instability of capitalism may arise partly out of certain technical defects of an elaborate exchange system that results in unemployment and depression; it also results, however, from certain delegitimations of exchange, [...] So capitalism undermines itself, as Schumpeter pointed out, despite its success, because of the failure of exchange institutions, such as finance, banking, corporations, and so on, to develop an integrative matrix that will legitimate them* [...] (Boulding, 1973, p.110). Therefore, the social state characterized by the allocation $N=(45,45,10)$ would be preferred over the social state characterized by $M=(60,30,10)$. In this perspective, it is also clear why this approach can be considered as the milestone of peace economics.

This approach helps to understand the sharp difference between deterrence and peace. In fact, they have different positions in Boulding's triangle. Deterrence is a threat system characterized by a dynamic of threat and counter-threat. Peace, on the other hand, represents a scenario where integrative relations and exchange relations dominate over those of threat. If we were to ideally locate peace and deterrence within Boulding's triangle, we would find that a situation of peace could be placed in a lower area of Figure 4, while situations of deterrence would be situated higher up. An economic policy for peace would be one that helps move societies, communities, and polities from a zone of deterrence to a zone of peace. In brief, Boulding highlights the existence of an optimal point — a stable peace — which is conceptually distinct from deterrence. It is worth noting here that Boulding paves the way for a definition of positive peace.

A remarkable example in history is undoubtedly the European integration after the World War II. Not only the economic integration has led to a deep economic interdependence but also the development of common institutions has established an effective and stable integrative systems. In brief, the peace established in western Europe can be explained along the lines of Boulding's approach.

Figure 4. Peace and Deterrence



To translate this argument into simple formal terms, we could consider the different allocations as the triangular coordinates of various points. In this case, the Euclidean distance between a point considered optimal and the different social states could serve as a straightforward yet effective analytical tool. The point that exhibits the shortest distance from the optimal point of peace would be the one to prefer. However, this type of judgment inevitably brings the discussion back to the difficulty of unequivocally and precisely defining an optimal point. As Boulding himself acknowledges, the choice of a reference optimal point depends on one's own preferences. In any case, in the Boulding's perspective the optimal point somehow anticipates the idea 'evolutionary stable' equilibrium.

6. Conclusions

This brief essay has aimed to present some of the defining elements of Kenneth Boulding's triangular theory of social relations. As emphasized in the introduction, despite the fact that Boulding's works are not strictly formal treatises, they deserve to be rediscovered as anticipators of some of the themes currently capturing the interest of economists. In particular, the social triangle has the merit of intuitively bringing human and social relationships into a single theoretical framework.

Firstly, this approach stimulates economists to develop new analytical models in which the interdependence of the utility functions of different economic agents encompasses aspects of integration and threat in addition to the traditional one of exchange. Secondly, this theoretical approach also allows for the development of new criteria for evaluating economic policies or public policies. Indeed, certain policies alter the social state of a society in what sense? Some policies produce a social equilibrium oriented towards a greater inclination for integrative relationships or towards relationships of threat and coercion. This question is particularly important in the presence of public policies because the public entity naturally relies on a coercive principle but at the same time on legitimacy and credibility, characteristics typical of integrative relationships.

More generally, this approach forms the very foundation of peace economics because it clearly demonstrates that stable and peaceful scenarios can only be realized in the presence of strong integrative relationships with minimized threats. Indeed, [...] *war can be regarded as the pathology of the integrative system* [...] (Boulding and Boulding, 1990, p.17). Establishing a stable peace, in particular, would also involve a learning process and a dynamic path, particularly aimed at reducing informational asymmetry by developing shared self-images, thereby sustaining an integrative system capable of preventing the use of force. Boulding's optimum is, therefore, a point that can be reached when integrative forces become dominant over both exchange and threat mechanisms.

It seems appropriate to conclude this brief essay by quoting the verses that Boulding used to conclude his presentation at the American Economic Association conference in 1962, summarizing his thoughts on the triangular approach to human and social relations.

*“Four things that give mankind a shove
Are threats, exchange, persuasion, love;
But taken in the wrong proportions
These give us cultural abortions.
For threats bring manifold abuses
In games where everybody loses;
Exchange enriches every nation
But leads to dangerous alienation;
Persuade organize their brothers
But fool themselves as well as others;
And love, with longer pull than hate,
Is slow indeed to propagate.”⁸*

⁸ Boulding (1963), p. 434

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