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Strategic Signaling A Lever for France in the Competition Between Powers?

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Cover: French armies during Heifara, Polaris and Orion exercises.

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Focus stratégique

Resolving today's security problems requires an integrated approach. Analysis must be cross-cutting and consider the regional and global dimensions of problems, their technological and military aspects, as well as their media linkages and broader human consequences. It must also strive to understand the far-reaching and complex dynamics of military transformation, international terrorism and post-conflict stabilization. Through the “**Focus stratégique**” series, Ifri's Security Studies Center aims to do all this, offering new perspectives on the major international security issues in the world today.

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Executive Summary

The geostrategic context has moved out of the classic “peace-crisis-war” continuum, as used in France over the past three decades, to enter a new cycle. Identified in the 2021 Strategic Vision of the Chief of Defense Staff, the triptych “competition-contestation-confrontation” underlines the importance of acting in gray areas, below the threshold of open conflict. In addition, the extension of conflict to new environments and fields (cyber, informational) and new operating methods resulting or not from hybridity (strategic intimidation, ambiguity, etc.), reinforce the need to understand correctly friendly as well as enemy actions in all environments, in order to “win the war before the war”. In such a context, France's credibility is essentially based on its ability to translate its words into concrete actions. The lack of consistency between speech and actions, but also between the different levels of communication (political, diplomatic, military, etc.), can constitute so many flaws preventing the conduct of an audible and credible activity.

All military activity is intended to influence the will of actual or potential adversaries, whatever the domain and whatever the vector. Any military activity is therefore perceived by a multitude of actors, who interpret it according to their socio-cultural references, their interests and their respective objectives. Military action could, therefore, from its conception, be considered as a signal that the various target audiences will perceive and interpret, in order to demonstrate France's intentions, determination and capabilities, without however crossing the threshold of open conflict. The ambition is to weigh on the adverse calculations and to have them evaluated in a favorable direction, without necessarily resorting to force but relying on military credibility. This approach, which is called “strategic reporting”, can cover different meanings and maneuvers.

Strategic signaling is firstly part of the strategic deterrence and prevention functions, but also participates in the “knowledge, understanding and anticipation” function (to target the competitor upstream and then understand the impact of the reporting downstream), “intervention” (because a report can be a military operation), “protection” (in the context of cooperative reporting for example) and now “influence”, a new function created in the National Strategic Review 2022. If it can be useful to bring the strategic signaling carried out by the Armies of a military strategy of influence, it should however not be reduced to this, and not to confuse “communication” and strategic “signaling”.

However, if the practice of strategic signaling is common in the nuclear forces, including the French ones, the conventional forces still only apply it to a limited extent. The success factors of nuclear signaling (absolute nature of the weapon, limited number of transmission channels, identification of a specific receiver) can hardly be applied as they stand to conventional forces, due to the diversity of vectors and less control of the transmission chain of the transmitted message.

However, four types of signaling are detailed in this study: quantitative (for example, an unusual volume of forces deployed), qualitative (as the test of "rupture" capabilities), geographical (such as a military presence in a specific area) or cooperative (like a specific activity with a country or an organization). The French forces can, for example, drop soldiers in Estonia to demonstrate a change of posture to Russia, mobilize combat ships for a transit in the Taiwan Strait and thus affirm the will to enforce international law, or deploy its Rafale fighter planes to Australia and thus demonstrate its power projection capability.

Beyond a simple doctrinal or academic issue, the lack of conceptualization of conventional strategic reporting, therefore, has an impact on the effectiveness of French strategy. The implementation of "strategic signaling" activities should in fact constitute the declination of ministerial and interministerial decisions or orientations. This first requires defining a national strategy in this area, with the objectives of more effectively supporting the overall political vision, better prioritizing and timing the strategic activities carried out by the various ministries on the international scene and gaining readability and credibility with partners and competitors alike.

This study, therefore, offers some recommendations. First, by making the effort to clarify the politico-strategic intention, using military doctrines and public documents, signaling becomes a structuring element to support the targeted strategic objectives. Once the national strategy has been published, its interministerial implementation could be steered centrally by the SGDSN (General Secretariat for Defence and National Security), supported by dedicated units within each of the ministries concerned. Such a structure would ultimately ensure a global synchronization of reporting activities in all the instruments of power and then be able to quantify the real impact of it in all its dimensions.

Résumé

Le contexte géostratégique est sorti du *continuum* classique de « paix-crise-guerre », tel qu'utilisé en France au cours des trois dernières décennies, pour entrer dans un nouveau cycle. Identifié dans la *Vision stratégique* du chef d'état-major des Armées en 2021, le triptyque « compétition– contestation– affrontement » souligne l'importance d'agir dans les zones grises, sous le seuil d'un conflit ouvert. En outre, l'extension de la conflictualité à de nouveaux milieux et champs (cyber, informationnel) et de nouveaux modes opératoires ressortant ou non de l'hybridité (intimidation stratégique, ambiguïté, etc.), renforcent le besoin de compréhension des différentes actions amies et ennemies dans tous les milieux, afin de « gagner la guerre avant la guerre ». Dans pareil contexte, la crédibilité de la France repose sur sa capacité à traduire son discours en réalisations concrètes. Les défauts de cohérence entre le discours et les actions, mais également entre les différents niveaux de communication (politique, diplomatique, militaire, etc.), peuvent constituer autant de failles empêchant de mener une activité audible et crédible.

Toute activité militaire a pour vocation de peser sur la volonté d'adversaires avérés ou potentiels, quel qu'en soit le domaine et quel que soit le vecteur. Elle est en retour perçue par une multitude d'acteurs, qui l'interprètent différemment selon leurs références socio-culturelles, leurs intérêts et leurs objectifs respectifs. L'action militaire peut donc, dès sa construction, être envisagée comme un signal que percevront et interpréteront les différents auditoires ciblés, afin de démontrer les intentions, la détermination et les capacités de la France, sans toutefois franchir le seuil d'un conflit ouvert. Il s'agit de peser sur les calculs adverses et de les faire évoluer dans un sens favorable, sans nécessairement avoir à recourir à la force mais en s'appuyant sur un message de crédibilité militaire. Cette démarche, que l'on qualifie de « signalement stratégique », peut recouvrir différentes acceptions et manœuvres.

Le signalement stratégique s'inscrit d'abord dans les fonctions stratégiques « dissuasion » et « prévention », mais participe également à la fonction « connaissance, compréhension et anticipation » pour cibler le compétiteur en amont puis comprendre l'impact du signalement en aval ; « l'intervention » car un signalement peut être une opération militaire ; la « protection » dans le cadre du signalement coopératif par exemple et désormais « l'influence », nouvelle fonction créée dans la *Revue nationale stratégique 2022*. S'il peut être utile de rapprocher le signalement stratégique effectué par les Armées d'une stratégie militaire d'influence,

il convient cependant de ne pas l'y réduire, et de ne pas confondre « communication » et « signalement » stratégiques.

Pour autant, si la pratique du signalement stratégique est courante dans les forces nucléaires, y compris françaises, il est manifeste que les forces conventionnelles n'en font encore qu'une application limitée. Les facteurs de succès du signalement nucléaire, à savoir le caractère absolu de l'arme, le nombre limité de canaux de transmission et l'identification d'un récepteur précis, peuvent difficilement s'appliquer en l'état aux forces conventionnelles, du fait de la diversité des vecteurs et d'une moindre maîtrise de la chaîne d'émission du message transmis.

Quatre dimensions du signalement sont identifiées dans cette étude : il peut être quantitatif (par exemple, un volume inhabituel de forces déployées), qualitatif (tel que le test de capacités « de rupture »), géographique (soit une présence militaire dans une zone spécifique) ou coopératif (comme une activité spécifique avec un pays ou une organisation). Les Armées peuvent, par exemple, parachuter des soldats en Estonie pour démontrer un changement de posture à la Russie, mobiliser des bâtiments de combat pour un transit dans le détroit de Taïwan et ainsi affirmer la volonté de faire respecter le droit international, ou déployer ses avions de chasse *Rafale* jusqu'en Australie et ce faisant, démontrer une capacité en matière de projection de puissance.

Au-delà d'un simple enjeu doctrinal ou universitaire, l'absence de conceptualisation du signalement stratégique conventionnel a donc un impact sur l'efficacité de la stratégie française. La mise en œuvre d'activités de « signalement stratégique » devrait en effet constituer dans les faits la déclinaison des décisions ou orientations ministérielles et interministérielles. Cela nécessite d'abord de définir une stratégie nationale en la matière, avec pour objectifs de soutenir plus efficacement la vision politique globale, de mieux hiérarchiser et cadencer les activités à portée stratégique menées par les différents ministères sur la scène internationale, et de gagner en lisibilité et en crédibilité auprès des partenaires comme des compétiteurs.

Cette étude propose donc quelques recommandations. Premièrement, en faisant l'effort de clarifier l'intention politico-stratégique, à l'aide de doctrines militaires et de documents publics, le signalement devient un élément structurant pour soutenir les objectifs stratégiques visés. Une fois la stratégie nationale publiée, sa mise en œuvre interministérielle pourrait être pilotée au niveau central par le Secrétariat général de la Défense et de la Sécurité nationale (SGDSN), soutenue par des cellules dédiées au sein de chacun des ministères concernés. Une telle structure permettrait d'assurer *in fine* une synchronisation globale des activités de signalement dans tous les instruments de pouvoir et d'ensuite être en mesure de quantifier l'impact réel de celui-ci dans toutes ses dimensions.

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Introduction

From February to May 2023, the French armed forces conducted their biggest training exercise since the Cold War. The joint exercise ORION (*Opération de grande envergure pour des armées Résilientes, Interopérables, Orientées vers le combat de haute intensité et Novatrices* [large-scale Operation for Resilient, Interoperable, high-intensity-combat-Oriented, and iNnovative armed forces]), which had been in the planning since 2020, involved the mobilization of over 12,000 troops from the three branches of the armed forces, who were deployed across the French territory for several months. While the objective of this multi-domain integration exercise—which included elements of information, cyber, and space warfare—was to ensure the operational readiness of the French armed forces, it was set apart from past exercises by its scale and characteristics. Built around a “hypothesis of major engagement”, this exercise confirmed the shift toward high-intensity-combat readiness and emphasized France’s determination to defend both its own interests and those of its allies. It also sought to demonstrate France’s ability to conduct entry operations¹ and to assume the leadership of a multinational coalition under degraded conditions.

Finally, in their communications with journalists and members of parliament, the armed forces presented this exercise as a “strategic signaling” maneuver.² Indeed, a report on operational readiness, produced by two members of the French National Assembly’s National Defense and Armed Forces Committee, stated that ORION would act as “strategic signaling” and that an appropriate communications strategy toward both France’s partners and its competitors was therefore needed.³ Official discourse has also presented other “major exercises” in strategic signaling terms, including Polaris, which was conducted by the French Navy in 2021, and the French Air and Space Force’s “eifara” missions. The same is true of the maneuvers—both visible and invisible—conducted by components of the French nuclear deterrent, the Strategic Air Forces (FAS; Forces aériennes stratégiques), the Nuclear Naval Aviation component (FANu; Force aéroportée nucléaire), and the Strategic Oceanic Force (FOST; Force océanique stratégique).⁴

1. On the challenges involved in entry operations, see C. Brustlein, “Entry Operations and the Future of Strategic Autonomy”, *Focus stratégique*, No. 70, Ifri, December 2017.

2. C. Pietralunga, “Orion’, un exercice militaire d’une ampleur inédite dans le sud de la France pour se préparer à la guerre de haute intensité”, *Le Monde*, February 24, 2023.

3. B. Liso and A. Pic, *Rapport d’information en conclusion des travaux d’une mission flash sur la préparation opérationnelle*, No. 822, Commission de la défense nationale et des forces armées, Assemblée nationale, February 8, 2023, pp. 29 *et seq.*

4. Admiral Pierre Vandier’s hearing before the Commission des Affaires étrangères, de la Défense et des forces armées with regard to the 2023 Finance Bill, Sénat, October 26, 2022.

The concept of strategic signaling is in fact derived from the vocabulary of nuclear deterrence, and its use is mainly understood in this field and within this community. While there is clearly still a need to signal one's intentions and ability to follow through on them to a competitor in the context of a conventional conflict, the unique nature of nuclear weapons and the absolute and irrevocable destruction they would cause should they be used prompted the development of a sophisticated signaling grammar during the Cold War. A ballistic missile qualification launch, an airborne raid exercise, or raising the alert threshold of the strategic forces (along the lines of the US DEFCON levels) are all well-known tools to nuclear deterrence strategists. The war in Ukraine has brought these issues back into the spotlight, particularly in relation to analysis of Russian strategic signaling.⁵

However, as we have seen, the term “strategic signaling” is increasingly used in France outside of a purely nuclear context. The concept appears as one of the objectives of the 2022 *National Strategic Review (RNS; Revue nationale stratégique)* in relation to maintaining stability in the Indo-Pacific, with France presented as “developing its capacity in strategic anticipation and intelligence [*signalement*]”.⁶ More broadly, the *RNS* calls for the armed forces to develop “a variety of capability options for (...) strategic warning [*signalement*]”.⁷ The concept now appears to permeate all strategic functions, from deterrence to influence (a new strategic function in this *RNS*), via the prevention function to which it seems closest.

Despite the numerous references made to it in official documents and public statements, the institutional conception of “strategic signaling” in France is difficult to pin down, particularly in relation to the conventional forces. There is no definition of it in any of the doctrinal documents: a joint doctrinal reflection on “strategic intimidation”⁸ was drafted in 2012 but ultimately not adopted by the armed forces, and this term is now reserved for describing competitors such as Russia. Similarly, the definitions proposed in operational communications strategy doctrines come close to strategic signaling, without explicitly using this term.

The lack of conceptualization and reflection on conventional strategic signaling is not simply a doctrinal or academic issue; it also has an impact on the effectiveness of French strategy. While France clearly produces signals, failure to include this aspect early in the planning stage can limit the effectiveness of this approach, in terms of its impact, credibility, or coherence. In addition, unlike in nuclear deterrence, where the limited number of transmitters and “channels” means that a message is more likely

5. Numerous analyses have been produced on this topic, including A. C. Arndt and L. Horowitz, “One Year of Nuclear Rhetoric and Escalation Management in Russia’s War Against Ukraine: An Updated Chronology”, No. 1, Stiftung Wissenschaft und Politik, February 2023.

6. Secrétariat général de la Défense et de la Sécurité nationale (SGDSN), *National Strategic Review 2022*, November 2022, p. 46.

7. *Ibid.*, p. 51.

8. Centre interarmées de concepts, de doctrines et d’expérimentations (CICDE), “Réflexion doctrinale interarmées sur l’intimidation stratégique”, RDIA-006, January 2012.

to have the desired effect, the diverse range of tools available to the conventional forces can dilute a message and make it harder to interpret.

Against a backdrop of renewed strategic competition between major powers, the stepping up of major exercises and maneuvers by both France's partners and its competitors,⁹ and interference in the information sphere, which is being increasingly targeted by influence operations, this would seem an opportune moment to draw lessons from nuclear grammar to consider how France might develop a concept of strategic signaling specific to the conventional forces, and how this might be applied at the joint force and interministerial levels.

To do so, we must first place strategic signaling in its intellectual context. The concept is used in biology and economics, as well as in the context of nuclear deterrence strategy, from different perspectives. Drawing on these diverse disciplinary fields enables us to sketch out some initial theoretical lessons for the conventional forces, which are then compared to current conventional signaling practices in France. By bringing these insights together, we are able to propose a French concept of conventional signaling, some recommendations regarding governance, and best practices by environment, by domain, and at the joint force and interministerial levels.

9. These include the Zapad and Vostok exercises, which are regularly conducted by the armed forces of the Russian Federation in partnership with its regional allies, notably China.

A multifaceted concept with multiple origins

Since it refers primarily to the idea of a “signal”, i.e., a fact or event that heralds something or marks its beginning, a theoretical analysis of the concept of strategic signaling must begin with the information and communication sciences, and with economics, mathematics, and psychology. Thus, there is an extensive field of management studies that focuses on the definition of strategic signaling as a way for corporate managers to interpret the signals sent by their competitors, in order to measure their aggressiveness in a specific market, the use of bluffing, or even how much the firm is willing to pay to invest in the business sector or to launch an acquisition operation against its competitor.¹⁰ There are, therefore, links between this academic field and that of international relations, particularly in the current context of heightened strategic competition.

International relations and the study of the strategies adopted by states to communicate their intentions have also drawn on game theory, particularly in the early decades of the Cold War, in order to reflect on nuclear deterrence. Even more so than in marketing or management, the “absolute” nature of nuclear weapons requires clear, comprehensible communication between the nuclear-weapon states (NWS). While this approach has been subsequently criticized for not taking enough factors into account, and for a potentially dangerous oversimplification of complex situations, it is still useful to understand the contribution made by game theory to the comprehension and formulation of a strategic signal, in terms of both nuclear deterrence and conventional forces.

A strategic concept rooted in scientific theories

Two theoretical fields are useful for understanding the principles of strategic signaling: communication theory and game theory. Describing the various elements that make up an act of communication enables us to understand its “mechanics”, while game theory provides a framework for analyzing a strategic action.

10. J. Prabhu and D. W. Stewart, “Signaling Strategies in Competitive Interaction: Building Reputations and Hiding the Truth”, *Journal of Marketing Research*, Vol. 38, No. 1, 2001, pp. 62-72.

The mechanics of strategic signaling as understood through communication theory

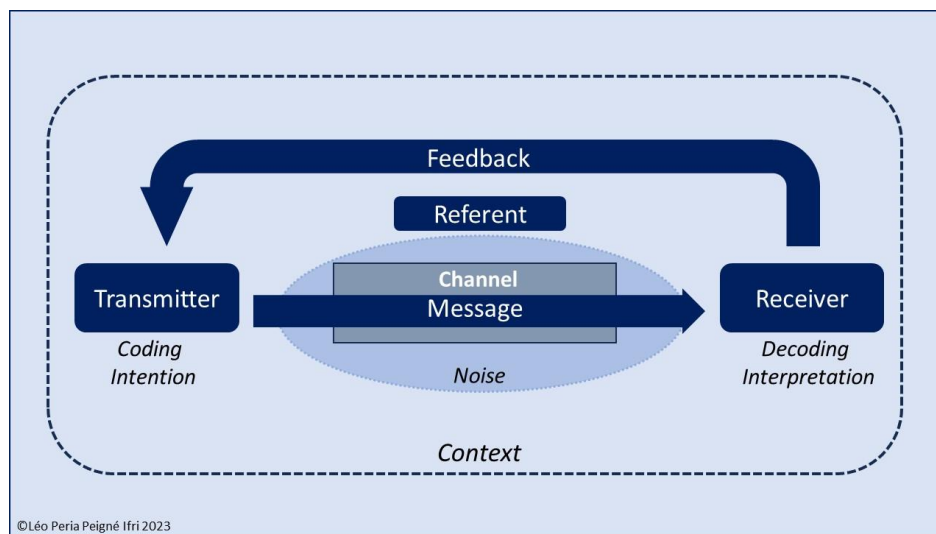
All organisms communicate. From electrically charged atoms to molecules, proteins, pheromones, and pollens, a vast range of media are used in nature to “write” and “transmit” messages, whether they are sent by a microbe, a plant, or an insect. Regardless of the mode of interaction or dialogue used, the mechanism of communication follows the same model, involving a transmitter, a receiver, an intention, a message, a channel, a context, encoding and decoding, interpretation, a referent, “noise”, and in some cases feedback. The model developed by the mathematicians Claude Shannon¹¹ and Warren Weaver has long served as a standard way¹² of schematizing the mechanics of communication. Various elements have been subsequently added to it in order to describe in greater detail all the factors that need to be considered in a communication sequence. Taken together, these elements make it possible to quickly grasp all of the subtleties and pitfalls of a “communication maneuver”, regardless of the domain, from a simple conversation between two people to a strategic signaling action.

Every act of communication consists above all of a central element: the message. This information is then transmitted in a particular form: visual, oral, written, etc. In the context of a military maneuver, this may be the conspicuous firing of a practice shot, or the use of a particular weapon such as a cruise missile or hypersonic missile. Then there is the transmitter (or “addresser” in linguistics), i.e., the sender of the message. In everyday life, at the individual level, this typically involves a spontaneous conversation, either written or spoken; but at the level of a group, organization, or public institution, the transmitter may want to conduct a more structured maneuver, such as an advertising campaign, with a longer-term intention and more refined tools of analysis.

11. See in particular his article “A Mathematical Theory of Communication”, *Bell System Technical Journal*, Vol. 27, No. 3, July 1948, pp. 379-423.

12. D. Picard, “De la communication à l’interaction : L’évolution des modèles”, *Communication & Langages*, No. 93, 1992, pp. 69-83.

Figure 1: The Shannon-Weaver model of communication



Source: W. Weaver and C. E. Shannon, *The Mathematical Theory of Communication*, Champaign, IL: University of Illinois Press, 1963.

At the strategic level, while it may be an operator who technically triggers a signal—such as a soldier in charge of a ballistic missile silo, or a squad leader heading up a ground patrol—the transmitter is typically a state or an international organization such as NATO. The transmitter targets a receiver (or addressee), which receives the message, for example by reading the text sent to it, seeing the images broadcast, or hearing the announcement made on the radio. As with the transmitter, when it comes to strategic signaling, the receiver can be an actual or potential adversary, an ally, a partner, or a third party. It is usually a state or group of states, or in some cases an organization, such as a paramilitary or terrorist group.¹³

An act of communication also requires a channel: the medium through which the message travels from transmitter to receiver—in everyday terms, typically the press, television channels, or the internet. Information strategies generally focus on these types of “verbal” channels, sometimes overlooking “non-verbal” channels. Strategic signaling focuses specifically on military actions (such as deployments, exercises, and qualification launches) as the preferred channels for transmitting certain messages. These may be combined with other verbal vectors, such as speeches or various publications, but the latter do not generally have the three key features of strategic signaling: credibility, capability, and creating a differential.

Every message, whether or not it can be accessed by the general public, uses a code. Communication therefore involves both encoding and decoding. In technical terms, the transmitter is the one who “encodes” the message, and the receiver is the one who “decodes” it. For a message to reach a

13. A. Wenger and A. Wilner (eds.), *Deterring Terrorism: Theory and Practice*, Stanford: Stanford Security Studies, 2012.

receiver, it is first necessary to ensure that the latter is capable of decoding the signal sent to it.

A message is inevitably sent in a particular context, such as a political climate, an international current event, a crisis, or a global sporting event. Associated with the context, noise consists of anything that might disturb the environment in which the message circulates. This may be noise in the physical or concrete sense, such as street noise, whose sound level must be exceeded for the transmitter to be heard by the receiver in a conversation between two people in the street; or in the figurative sense, as the sum of a large number of signals sent at the same time and in which a specific message can get lost—hence the importance of creating a differential when sending a signal.

In addition to these “ingredients”, other elements provide a useful contribution to an in-depth analysis or description of communication. The intention, for example, is the motivation behind the sending of a message: as part of a plan, a thought, or a strategy. Interpretation takes place after the message has been received and decoded, it is the stage at which information is assigned a meaning. In the encoding phase, or even during interpretation, a referent may be employed. The message will then become intelligible or thinkable in relation to this reference point.

Although the model is presented here as relatively linear, running from transmitter to receiver, it is important to consider a broader dynamic, which includes feedback. We can thus build on the Shannon-Weaver model by including this concept, proposed by the US mathematician Norbert Wiener,¹⁴ which takes into account the receiver’s feedback to the transmitter after the message has been received, decoded, and interpreted.

Again through the lens of a dynamic approach, the concept of “stimulus”¹⁵ is also essential here. Indeed, any successful communication, even before it is interpreted, requires the message to be noticed, i.e., to have a sensory impact on the receiver.¹⁶ This is an important point, as it enables us to understand that a message can be sent by intensifying a signal, but also by stopping an existing signal, which ties in with the idea of creating a differential. For example, an increase in the frequency of warship patrols in an area or, conversely, “radio silence” on a deconfliction line in a high-risk zone are both potentially strong strategic signals. The question of perceptions, as notably explored by Robert Jervis in his work on political

14. N. Wiener, *Cybernetics, or Control and Communication in the Animal and the Machine*, Cambridge: MIT Press, 1948.

15. H. Tardieu, “Psychologie expérimentale et comparée”, *Bulletin de psychologie*, Vol. 32, 1978, pp. 87-91.

16. On this, see the work of the German physician Ernst Weber (1795–1878), a forerunner of experimental psychology and the psychology of perception.

psychology, must therefore be considered right from the planning stage of a signal.¹⁷

Although this study will use the “transmitter-channel-receiver” model to propose a conceptualization of conventional strategic signaling, other models of communication exist. In the model proposed by the US psychiatrist Harold D. Lasswell,¹⁸ communication is seen instead in terms of a group of five questions: Who says What, to Whom, in what Channel, and with what Effect? The “Who” question is designed to identify all the characteristics, both sociological and cultural, of the transmitter, while the “to Whom” question considers variables such as age and gender for a particular population, as well as cultural reference points or those in the receiver’s environment. In Lasswell’s approach, dynamic communication also incorporates factors such as influence and persuasion.

All of these models can thus be used to describe an act of communication by identifying each element of the mechanics involved. They also help us to be aware of and anticipate any errors or situations that might be other than expected. For the possibility of misunderstanding exists whenever an event is wrongly interpreted as a message, or when a message is received not by the original target but by another receiver. There is a risk of ambiguity whenever a message is open to too many interpretations. Finally, noise, the choice of a flawed or inappropriate channel, or a sudden and unforeseen change of context are all obstacles that can result in the failure of a communication operation.

Game theory as a dialectical tool useful for strategic signaling

As we have seen, a theoretical approach based on various scientific models provides a framework for analyzing any act of communication. This makes it possible to detect or anticipate ambiguities or possible malfunctions. However, an act of strategic signaling takes place within the framework of diplomatic-military interactions. In this sphere, the context of strategic competition and, more generally, the non-cooperative dimension of relations between the states involved must be central to the preparation of a strategic signaling operation. In this respect, game theory provides other models that can help improve signal emission through methods designed to understand relations between states.

17. R. Jervis, *Perception and Misperception in International Politics*, Princeton: Princeton University Press, 1976.

18. H. Lasswell, *The Structure and Function of Communication in Society*, New York: Institute for Religious and Social Studies, 1948.

The foundations of modern game theory, first described in the early twentieth century by the German mathematician Ernst Zermelo¹⁹ and the French mathematician Émile Borel,²⁰ then further developed by the US mathematicians Oskar Morgenstern and John von Neumann in 1944,²¹ provide valuable mathematical tools in a whole host of different fields, from economics and the social sciences to international relations. This branch of mathematics studies interactions between “agents” or “players” in specific situations that are characterized by certain rules or basic assumptions. As such, it offers a scientific approach to decision-making problems in situations of complex interdependence—where the actions of certain agents depend on those of others, and where each party tries to influence or guess the behavior of its competitors or allies in order to adapt accordingly.²²

Uncertainty, often identified by Clausewitz as a central difficulty in operations on the battlefield,²³ is an equally pervasive constraint in international relations. Every possible effort must therefore be made to limit this factor. When game theory first emerged as a method for analyzing and predicting international relations, it was envisaged as a way to reduce the situations that strategists and decision-makers might have to deal with to models that could cover all possible outcomes—in the mathematical sense of the word.

This schematization of reality is produced by basing each model on certain assumptions: the number of players, the information each one has about the others, the sequencing of the game, etc. These variables thus make it possible to more closely approximate historical events and past crises, in order to reinterpret them retrospectively and analyze the critical stages. Models can also include variants in which players are allowed to cooperate, thus mimicking situations involving alliances, while others are “strictly competitive” (also known as “zero-sum games”), in which the interest of one player is strictly opposed to the interest of the other.

One of the examples that can most easily be transposed to international relations is the “Schelling point” or “focal point”.²⁴ This is a “pure coordination” game, both a “simultaneous game” (all of the players decide on their strategy at the same time) and a “complete information” game (players

19. E. Zermelo, *Über eine Anwendung der Mengenlehre auf die Theorie des Schachspiels*, Berlin: Springer, 1913.

20. E. Borel, *Le jeu, la chance et les théories scientifiques contemporaines*, Paris : Gallimard, 1941.

21. O. Morgenstern and J. von Neumann, *Theory of Games and Economic Behavior*, Princeton: Princeton University Press, 1944.

22. The literature on this topic is vast. See in particular H. Hamburger, *Games as Models of Social Phenomena*, San Francisco: W. H. Freeman, 1979; R. D. Luce and H. Raiff, *Games and Decisions*, New York: Wiley, 1957; T. Schelling, *The Strategy of Conflict*, Cambridge: Harvard University Press, 1960; and D. Sindal, “The Game Theory of International Politics”, *World Politics*, Vol. 38, No. 1, October 1985, pp. 25-57.

23. C. Von Clausewitz, *On War*, ed. and trans. M. Howard and P. Paret, Princeton: Princeton University Press, 1976 [1832].

24. C. Morel, “Variations sur la négociation tacite et le point focal de Thomas Schelling”, *Négociations*, Vol. 1, No. 1, 2004, pp. 15-26.

have access to all of the other players' possible actions, possible gains, and motivations). As set out in Thomas Schelling's book *The Strategy of Conflict*, this game features two travelers who find themselves separated by chance during their journey, without having agreed beforehand on where they would meet if they were to become separated. At the point they lose sight of each other, each traveler knows their own activities for the day, what the other party knows about their activities, as well as the other party's activities. The "focal point" is thus the place that each of the two travelers identifies as that where they are most likely to find the other, and it is identified by cross-checking the information each has in their possession.

This situation can be likened to a conflict in which two adversaries have different objectives but also their own lines that they do not want to cross. Here, the two adversaries do not want to meet physically, but by cross-referencing the information they have about themselves and their adversary, each of them can identify a rule that both parties would need to respect, as a kind of tacit agreement or virtual "meeting point". For example, without communicating, the two parties can still agree on a particular mode of confrontation, or on not employing a particular capability, or on not allowing a conflict to spill over into a particular dimension. Similarly, the "focal point" can also be used in arms control negotiations, with each party to the treaty making efforts to move toward a situation that is acceptable to the other, without having agreed to it beforehand. Signals can help to clarify these expectations.²⁵

Another famous game theory model, the "prisoner's dilemma", has also been applied to international relations, particularly in the context of the Cold War arms race and, more broadly, nuclear deterrence, though it has been subject to some criticism.²⁶ Here, the United States and the USSR are represented as two prisoners who are unable to give up the potential advantages conferred by nuclear weapons, even in order to move toward a goal of global peace in which the risks to the other player are reduced. This situation is exacerbated by uncertainty regarding the adversary's choices and one's own capabilities: effective strategic signals therefore aim to reduce this uncertainty and thus partially control the risk of escalation.²⁷ This example can also be likened to the Nash equilibrium, which has found numerous applications in nuclear deterrence and the "balance of terror" doctrine.²⁸

As yet, mathematicians have been unable to resolve the question of whether game theory is normative or descriptive. While the method has been criticized for its oversimplification, it provides a framework for analyzing real

25. M. Troitskiy, "Focal Points in Arms Control", in J.-W. van der Rijt and R. Schuessler (eds.), *Focal Points in Negotiation*, London: Palgrave Macmillan, 2019, pp. 103-123.

26. S. Plous, "The Nuclear Arms Race: Prisoner's Dilemma or Perceptual Dilemma?", *Journal of Peace Research*, Vol. 30, No. 2, 1993, pp. 163-179.

27. N. Eber, *Le dilemme du prisonnier*, Paris: La Découverte, 2006.

28. M. Rudnianski and A. d'Assignies, "From MAD to MAD", in M. L. Best (ed.), *Strategic Stability in the Post-Cold War World and the Future of Nuclear Disarmament*, London: Springer, 1995, pp. 229-258.

geopolitical situations, by offering a kind of catalogue of theoretical models that can be referred to in order to study the behavior of the various actors in a particular situation, and thus helps to improve upstream strategy development. Emerging technologies could also make it possible to take more factors into account and process them more efficiently.²⁹ Great care must be taken, however, when transposing such models from theory to reality, especially when it comes to military operations.

Stronger conceptualization in nuclear deterrence

The concept of strategic signaling is primarily used in the sphere of nuclear deterrence.³⁰ Given the colossal stakes that would be involved in a nuclear war and the absolute nature of nuclear weapons,³¹ it is essential for NWS and nuclear-armed states to demonstrate their determination to their adversaries in order to deter them, by means of strategic signaling that must then be correctly interpreted. This can involve a degree of ambiguity: clearly setting red lines is in fact a risky move, as it exposes those who draw them to sub-threshold tactics on the part of adversaries who may carry out aggressions that border on—but remain within—these pre-established limits.³² A correctly understood signal can also reduce the risk of uncontrolled escalation.

For France and the other NWS, the conceptualization and practice of strategic signaling date back to the Cold War and are relatively well understood and controlled, primarily due to a short, single chain of command and a limited number of transmission channels. This state of affairs is, however, being challenged by the emergence of new nuclear powers and disruptive technologies.

A set of theorized but only partially controlled mechanisms

The first discussions of “warning signals” came in the wake of the surprise attack on Pearl Harbor³³ and were therefore based on an example preceding the atomic age. But the theorization of strategic signaling applied to nuclear deterrence originated in the US-Soviet rivalry and the first nuclear crises. The two great powers had to strike a delicate balance between a willingness to take risks in order to demonstrate an intention

29. R. Lindelauf, “Nuclear Deterrence in the Algorithmic Age: Game Theory Revisited”, in F. Osinga and T. Sweijts (eds.), *Deterrence in the 21st Century – Insights from Theory and Practice*, Netherlands Annual Review of Military Studies 2020, 2021, pp. 421-436.

30. J. Dufourcq, “Les signaux de la dissuasion stratégique”, *Les Champs de Mars*, Vol. 25, No. 1, 2013, pp. 33-56.

31. B. Brodie (ed.), *The Absolute Weapon: Atomic Power and World Order*, New York: Harcourt Brace, 1946.

32. J.-L. Lozier, “Incertitudes et manœuvre dissuasive”, *Revue Défense Nationale*, No. 767, 2014, pp. 75-78.

33. R. Wohlstetter, *Pearl Harbor: Warning and Decision*, Redwood City: Stanford University Press, 1962.

to gain the upper hand in this strategic competition, and fear of an escalation that could result in the destruction of the countries involved, and even of a proportion of humankind more broadly.

Over sixty years later, the Cuban Missile Crisis remains the main—if not the sole—crisis in which the two belligerents and leaders of an NWS would have considered the use of a nuclear weapon. This crisis, the result of a succession of increasingly escalating strategic signals, was nevertheless averted by the refusal of politicians to give in to the desires of military leaders, and by the line of communication established between the US and Soviet presidents. This need to communicate and better understand the signals sent by the adversary was a feature throughout the rest of the Cold War, from the installation of the “red telephone” (in fact the Moscow-Washington hotline, using first Teletype, then fax and now a secure computer link) in 1963 to the creation of the Nuclear Risk Reduction Centers in 1987. Other smaller-scale crises³⁴ have confirmed the need to adopt a “nuclear grammar”, of which strategic signaling is a basic rule. This has resulted in the development of doctrines and declaratory policies that, in tandem with demonstrations of capability, are designed to demonstrate a state’s credibility to defend a given sphere of interests, through the use or threat of the use of nuclear weapons. These signals may also form part of a broader dimension of political rivalry and coercive diplomacy, as with the decision to put the US Strategic Air Command on nuclear alert in October 1969 as US forces foundered in Vietnam.³⁵

The end of the Cold War and the diminished importance of the issue of nuclear weapons in international relations have enabled the emergence of a broader reflection on the reduction of strategic risks³⁶ and the design of new formats for dialogue between the NWS in order to communicate respective doctrines and any “red lines” and thus strengthen the direct lines of communication established during the Cold War. These include the P5 Process, which brings together the United States, Russia, China, France, and the United Kingdom to discuss these strategic issues. Ballistic missile launch notification agreements, such as the one signed in 1988 between the United States and the USSR, are similarly designed to reduce the risk of a launch being misinterpreted as a signal, although they do not regulate the production of the signal itself.

Declaratory policies are also useful for contextualizing a strategic signal. Changes in the Nuclear Posture Review, the doctrinal document that sets out the possible uses of nuclear weapons by the United States, can thus influence

34. B. Tertrais, “‘On the Brink’— Really? Revisiting Nuclear Close Calls Since 1945”, *The Washington Quarterly*, Vol. 40, No. 2, 2017, pp. 51-66.

35. On this topic, see S. D. Sagan and J. Suri, “The Madman Nuclear Alert: Secrecy, Signaling, and Safety in October 1969”, *International Security*, Vol. 27, No. 4, 2003, pp. 150-183.

36. C. Brustlein, “Strategic Risk Reduction between Nuclear-Weapons Possessors”, *Proliferation Papers*, No. 63, Ifri, January 2021.

the doctrines of other NWS, such as China or Russia.³⁷ Coherence, or conversely discrepancy between doctrine and posture can also act as a signal: for example, the rapid development of China's nuclear arsenal, which is set to increase from 350 to 1,000 warheads by 2030, seems neither compatible nor credible given China's stated no first use policy.³⁸

Heightened strategic competition in recent years has, however, led some powers to produce increasingly reckless signals. Russia's nuclear rhetoric in the context of the war in Ukraine—and even since the invasion of Crimea in 2014—thus forms part of an “aggressive safeguarding” dynamic, in which the signals sent by Russia diverge markedly from the “responsible” behavior expected of a P5 member. Although Moscow is not currently demonstrating any willingness to use nuclear weapons, even for tactical purposes, the predominant role played by nuclear weapons in its strategic exercises and communications, as well as its movement of dual-capable delivery systems equates to intimidation, rather than deterrence. And while as part of the negative security assurances included in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the NWS undertake not to use—or threaten to use—a nuclear weapon against a non-NWS, Russia has failed to comply with this provision.³⁹

This escalation through strategic signaling is exacerbated by the increased risk resulting from the decline of arms control mechanisms. The United States' withdrawal in 2020, followed by that of Russia in 2021, from the Open Skies Treaty, which enabled the peaceful monitoring of the military activities of both great powers, thus dealt an initial blow to their mutual capacity to observe signals and interpret them correctly. Against a backdrop of strategic competition and then war in Ukraine, the United States' withdrawal from the Intermediate-Range Nuclear Forces Treaty, followed by Russia's suspension of the New START Treaty, have further reduced the trust between Moscow and Washington that is so essential to limiting the risk of escalation. While steps have been taken to reduce this risk, these developments do not bode well for the future of arms control.

The rise of new nuclear states also presents a challenge: while the West is familiar with Russian strategic signaling practices—although this does not prevent them from being used coercively, as demonstrated by the war in Ukraine—Chinese, Pakistani, Indian, and even North Korean conceptions of strategic signaling and accepted risk are less well understood. In Western democracies, nuclear signaling enables deterrence to be operationalized without recourse to testing, or even tactical or strategic use, and includes mechanisms for direct communication between powers, but this is not the case in Asia. Multipolar deterrence is a particularly pressing issue for the

37. J.-L. Lozier, “Unique ou fondamental ? Le rôle de l'arme nucléaire dans la politique déclaratoire de Joe Biden”, *Briefings de l'Ifri*, Ifri, December 13, 2021.

38. N. Leveringhaus, “Chinese Nuclear Force Modernization and Doctrinal Change”, *Briefings de l'Ifri*, Ifri, August 19, 2022.

39. I. Facon, “Guerre en Ukraine: Le sens du signalement nucléaire russe”, No. 30, FRS, July 27, 2022.

United States, which now has to consider its signaling toward multiple competitors: Russia, China, and possibly North Korea in a broader dynamic of extended deterrence in Northeast Asia. Other dyads, such as the Indo-Pakistani and even Sino-North Korean dyads, present their own risks and dilemmas in terms of signaling: the 1999 Kargil War led to Indian nuclear weapons (land, sea, and airborne components) being put on alert, and to aggressive rhetoric from both protagonists.⁴⁰

Finally, the emergence of new technologies such as artificial intelligence, with its ability to facilitate the dissemination of fake news and even to generate text or images,⁴¹ along with changes in practices such as the desacralization of public speech—as shown by Donald Trump’s tendency to communicate via Twitter—raise questions about the effectiveness and proper perception of these strategic signals.⁴²

French use of the appropriate component based on the desired signal

While the clarity of nuclear strategic signals is thus waning due to political, technological, and military developments, the two French components of nuclear deterrence still appear to be effective in producing an appropriate signal, each within its own sphere.

The airborne component⁴³ is thus traditionally viewed as “the one that can be seen”, in contrast to the seaborne component’s nuclear-powered ballistic missile submarines (SSBNs),⁴⁴ whose main asset is their stealth, thanks to their ability to avoid radar detection and their invisibility to ocean patrols. The French Strategic Air Forces (FAS) are aware that France’s nuclear air bases are under constant surveillance by its competitors, mainly via satellite. They therefore have a range of actions at their disposal, depending on the desired level of escalation and the degree of intention that the French president, who has sole control over the country’s nuclear deterrent, wants to express. In addition to regular deterrence exercises (such as Operation Poker)⁴⁵ and qualification launches of the ASMP-A missile, these include displaying the weapon casing on the air base tarmac, taking the Rafale jet out of its hangar, or even mounting the weapon under the aircraft. A French Rafale would, however, never fly with a nuclear weapon except on

40. M. Krepon and L. Dowling, “Crisis Intensity and Nuclear Signaling in South Asia”, in S. Lalwani and H. Haegeland (eds.), *Investigating Crises: South Asia’s Lessons, Evolving Dynamics, and Trajectories*, Washington: The Stimson Center, 2018, p. 201.

41. J. Johnson, *AI and the Bomb: Nuclear Strategy and Risk in the Digital Age*, Oxford: Oxford University Press, 2023.

42. H. S. Lin, B. Loehrke, and H. A. Trinkunas (eds.), *Three Tweets to Midnight: Effects of the Global Information Ecosystem on the Risk of Nuclear Conflict*, Stanford: Hoover Institution Press, 2020.

43. Made up of the Strategic Air Forces (FAS), which has two Rafale squadrons on permanent alert at the nuclear air bases, and the Nuclear Naval Aviation component (FANu), which has Rafale Marines deployed on the *Charles de Gaulle* aircraft carrier.

44. France has four SSBNs in its Strategic Oceanic Force (FOST).

45. B. Maigret, *Opération Poker : Au cœur de la dissuasion nucléaire française*, Paris: Tallandier, 2021.

a bombing mission. The “final warning” [*ultime avertissement*] strike, which is a unique feature of French doctrine,⁴⁶ can be seen as the final stage of nuclear strategic signaling: this “limited” use, carried out by the FAS against a predetermined target, would if necessary serve to demonstrate France’s resolve to an adversary who might have misunderstood the president’s definition of the country’s vital interests. It is clearly designed to give credibility to France’s determination to carry out a more substantial nuclear strike if necessary, either from the air or using the seaborne component and its ballistic missiles.

Even though they “cannot be seen”, SSBNs can also be used to produce strategic signaling.⁴⁷ Like the FAS, the M-51 qualification launches—announced publicly in advance—from Biscarrosse or off the coast of Brest are closely monitored by France’s partners and competitors. This visibility is even expected by the French armed forces, as a way of reassuring France’s allies and deterring its competitors through a demonstration of technical credibility. Similarly, although France does not issue official communications about submarine port visits and exercises—like the United States does⁴⁸—SSBN sorties from Brest harbor are regularly scrutinized and reported in the regional press, to the benefit of the authorities. While such news stories are of little importance in peacetime, they can act as important signals in times of crisis or war. The possible simultaneous patrol of three French SSBNs (of FOST’s total of four) reported by the Brest newspaper *Le Télégramme*, just after the outbreak of war in Ukraine, in March 2022, can thus be seen as a discreet form of strategic signaling, both to partners and to Russia, although the Élysée and the French Navy have maintained ambiguity by refusing to confirm or deny this sortie.⁴⁹

The multifactorial effectiveness specific to deterrence

French nuclear strategic signaling therefore provides a solid foundation for possible adaptation to the conventional forces. First, the small number of channels via which these signals can be expressed, with presidential statements typically limited on this subject, and the equally restricted deployments of the two components of deterrence, limits the risk of the message becoming fragmented and provides control over the vector and its effects. This is particularly the case for France, which does not employ dual-capable missiles: the sole mission of a nuclear weapon is to act as a deterrent,

46. A. Baconnet, “Les mutations du concept d’ultime avertissement”, *Revue Défense Nationale*, No. 794, 2016, pp. 116-120.

47. J.-L. Lozier, “Incertitudes et manœuvre dissuasive”, *op. cit.*

48. U.S. Strategic Command, “US-UK Conduct Combined Ballistic Missile Submarine Operations and Training to Enhance Strategic Partnership”, *Diálogos Americas*, January 4, 2023, available at: www.dialogo-americas.com.

49. S. Jézéquel, “Pourquoi la France a-t-elle fait appareiller trois sous-marins nucléaires au départ de l’Île longue ?”, *Le Télégramme*, March 21, 2022, available at: www.letelegramme.fr.

since a ballistic missile in the French arsenal can only carry nuclear warheads. The practices of other states with dual-capable weapons, such as Russia, can make signals harder to read.⁵⁰ France and other states do however use carrier ambiguity to reinforce deterrence: a *Rafale* jet carried by the *Charles de Gaulle* aircraft carrier, for example, might just as easily belong to a conventional squadron as to the FANu.

Moreover, as is the case with its UK partner, the small size of the French arsenal and its policy of “strict sufficiency”, designed to defend only French vital interests, also means that it retains greater control over the strategic signals sent, both in terms of the message and the receiver. As we have seen, a multiplicity of channels and receivers can blur the clarity and effectiveness of a signal, increasing the risk of misinterpretation. The United States, for example, is presented with growing difficulties in terms of strategic signaling due to its extended deterrence strategy and the shift toward multipolar deterrence.

On the organic level, France also benefits from a very tightly knit organizational structure, with a short chain of command and a commander-in-chief with great awareness of this issue. The president is the only person with the power to initiate a nuclear strike, which entirely centralizes the decision-making process⁵¹ and also reduces the risk of fragmentation and ensures greater control. The president is also the only person who can officially present doctrine, via highly ritualized speeches that are then interpreted within an equally small community.

The quasi-sacred nature of presidential statements can also prove problematic, as demonstrated by the highly critical reaction of certain European countries when President Macron declared that a nuclear strike in “Ukraine or the region” would not result in a direct response from France. While this was an unsurprising position for him to take, the vagueness of the term “the region”, which includes members of the European Union and NATO, sent out a message contradictory to the policy of the French deterrent being open to European partners, as expressed in an earlier speech.

Finally, the rich strategic culture around deterrence, as developed in particular by the “Four Generals of the Apocalypse”⁵² who theorized French nuclear strategy and doctrine, also permeates a whole network of officers and diplomats familiar with nuclear matters. This shared sociology has the benefit of facilitating dialogue and understanding, and therefore coordination before a signal is sent.

50. L. Wachs, “The Role of Nuclear Weapons in Russia’s Strategic Deterrence: Implications for European Security and Nuclear Arms Control”, *SWP Comment 2022/C 68*, Stiftung Wissenschaft und Politik, November 25, 2022.

51. J. Guisnel and B. Tertrais, *Le Président et la Bombe*, Paris: Odile Jacob, 2016.

52. F. Géré, “Quatre généraux de l’apocalypse: Ailleret, Beaufre, Gallois, Poirier”, in *Stratégique*, No. 53, Paris: La documentation française, 1992.

The practice of strategic signaling is thus able to draw on a long theoretical history that initially originated in communication theory and was then transposed to international relations via game theory. This theoretical model proved useful for studying the non-cooperative dimension of international relations during the Cold War, though it is important to note that the great powers still had to communicate with one another in order to avoid a nuclear escalation with devastating consequences. This is one of the reasons why nuclear forces, including in France, have had to master strategic signaling, supported by a very limited number of transmitters, channels, and receivers.

Partial application in the conventional forces

The effectiveness of nuclear strategic signaling is therefore based on three pillars: control over the message due to its centralization via a single transmitter, proven theorization that enables concepts to be better understood, and an established history of practice. At first sight, therefore, it would seem difficult to transpose these factors to the conventional forces, given the multiplicity of vectors and a lower degree of control over the signal transmission and planning chain. However, by drawing on nuclear strategic signaling theories and reflections on how the nuclear and conventional forces mutually support each other,⁵³ we can consider the theoretical foundations of a strategic signal produced by the conventional forces, outline the factors of its success, and propose a typology of these conventional signals.

Following on from these theoretical proposals, we observe that they have not yet been translated into French concepts and doctrines, and that the original concept of “strategic intimidation” has gradually shifted semantically to describe the practices of France’s competitors. This lack of conceptualization results in difficulties in implementation, not least because of a tradition of “bottom-up” or even retrospective planning of the exercises, maneuvers, and deployments that could be classed as strategic signaling.

The specific features of conventional strategic signaling

Unlike nuclear maneuvers, exercises, or declarations, which are systematically perceived as strategic signals due to their infrequency and the major consequences of their misinterpretation, not every activity carried out by the conventional forces constitutes a strategic signal. Like other military powers, both NWS and non-NWS, France regularly conducts exercises, deployments, and cooperative activities with its conventional forces that cannot necessarily be interpreted as strategic signals, nor are they intended as such by the French political and military authorities, although they may be perceived differently by competitors and partners.

53. In his hearing before the French National Assembly in January 2023, the Chief of the Defense Staff stated that “the conventional forces provide an essential support [to the nuclear deterrent]”. Similarly, the 2022 *RNS* states that “France has chosen (...) to ensure that the armed forces model makes sufficiently robust mutual support possible between nuclear and conventional forces”.

A consequence of the political intention

In theory, a strategic signal must first and foremost serve a political intention, i.e., the causes that will lead a state to commit military resources to convey a message. These intentions, or causes, have a meaning that is identified as the significant meaning of the action,⁵⁴ and which corresponds to its *why*. This part of the message sent to the target audience is accompanied by the significant meaning, which is conveyed by the nature of the act itself, and the signified meaning, or the meaning the act has for the target audience. Taken together, these three meanings, each with its own specific characteristics and risk of misinterpretation, make up the message sent by the strategic signal.

The significant meaning, or intention, is necessarily political. Without it, no military action can be strategic. This imperative enables us to make an initial distinction between routine actions, which have no signifying meaning of their own, and actions intended to convey a message, which combine risk-taking with a demonstration of capability in order to express a political intention.

Operation Thunder Lynx⁵⁵ of June 22, 2022, in which around 100 French soldiers from the 11th Parachute Brigade were airdropped into Estonia, can thus be seen as a strategic signal sent to Russia, in order to demonstrate support for Estonia—and more broadly for the integrity of the borders of Eastern Europe—and to confirm France’s airdrop capability. Similarly, the regular passage of French Navy vessels through the Taiwan Strait is intended to assert France’s determination to uphold international law and the principle of freedom of navigation.

As part of the message, this intention is therefore a necessary condition for the construction of a strategic signal, if not its cornerstone. For attempting to give a signifying meaning to an action that has already been initiated is unthinkable, since the nature of the action to be implemented must be informed by this intention, rather than vice versa. This is the only way to achieve the unity of action that is the basic principle of any strategy, and which is born of a unity between signifying meaning and significant meaning.⁵⁶

The literature on this topic generally breaks down the intentions—or political objectives—of strategic signaling into three broad categories: “status signaling”, “deterrence signaling”, and “compellence signaling” or “coercive signaling”.⁵⁷

54. L. Francart, *La guerre du sens*, Paris: Economica, 2000, p. 40.

55. Direction Terre du Ministère des Armées, “RETEX: Parachutés en Estonie”, July 4, 2022, available at: www.defense.gouv.fr.

56. L. Francart, *La guerre du sens*, *op. cit.*, p. 57.

57. S. Charap *et al.*, “Understanding Russian Coercive Signaling”, Santa Monica: RAND Corporation, 2022, pp. 15 *et seq.*

First, in status signaling, the state transmitting the signal is seeking to assert a position or rank on the local, regional, or international stage. This may be based, for example, on mastery of a technology or know-how. The acquisition of nuclear weapons and the benefits a state believes it can derive from them—protecting the regime, gaining a special place on the international stage, etc.—makes the demonstration of a functional nuclear arsenal (via a nuclear test or ballistic launch) a very strong status signal, as North Korea has regularly demonstrated. Similarly, Russia’s anti-satellite missile launch in November 2021 was a status signal designed to demonstrate its ability to carry out this type of strike on any satellite, should the circumstances one day require it.⁵⁸ Finally, China seeks to signal its status as a major power not only through its numerous military exercises but also through its extensive involvement in international organizations.⁵⁹

Although it is already a major player on the international stage (as an NWS and a permanent member of the United Nations Security Council), France also sends out status signals that consist of signaling its capabilities. For example, the Pégase exercise conducted by the French Air and Space Force between August and September 2022, which involved three *Rafale*, two MRTT Phénix, and two A400M, demonstrated France’s capacity to project power from mainland France to the Indo-Pacific, and served as a reminder of its commitment to protect even its most remote territories.⁶⁰

Second, a nation may want to make use of deterrence signaling, which is designed to discourage another nation from taking a particular action by making it aware of the reprisals to which it would subsequently expose itself. Here we can see the foundations of the concept of nuclear deterrence discussed above, which can be transposed to the conventional forces. The military personnel deployed in Eastern Europe as part of the Enhanced Forward Presence (eFP) mission, following the Russian invasion of Crimea, are therefore part of NATO’s broader deterrence strategy, which includes nuclear deterrence. This makes up for the flaws of a single tripwire force, which might be insufficient to credibly deter Russia.⁶¹ While they cannot prevent any potential Russian invasion on their own, this forward presence serves above all as a reminder of NATO solidarity and of the real consequences—both conventional and nuclear—that would follow from a major Russian attack on Eastern Europe.⁶²

58. E. Vincent, “Le tir antisatellite russe ravive le spectre de la guerre spatiale”, *Le Monde*, November 17, 2021.

59. P. Xiaoyu, “Status Signaling in International Relations”, in *Rebranding China: Contested Status Signaling in the Changing Global Order*, Redwood City: Stanford Scholarship Online, 2019.

60. Ministère des Armées, “Mission PEGASE 2022”, available at : www.air.defense.gouv.fr.

61. P. Poast and D. Reiter, “Death Without Deterrence, or Why Tripwire Forces Are Not Enough”, *War on the Rocks*, June 17, 2021, available at: www.warontherocks.com.

62. J. Vseviiov, *Constructing Deterrence in the Baltic States*, Tallinn: RKK/ICDS, 2021.

Finally, a strategic signal can also aim to make an opponent take a particular action: in Schelling's terminology, this is known as compellence signaling, and it is sometimes also referred to as coercive signaling. Here, the intention is not to deter an opponent via an immobile, defensive posture, but to encourage it to react (for example, to stop an action in progress). French doctrine defines the term as "making an adversary yield by subjecting it to physical pressure, i.e., by using combat resources against it".⁶³ In the strategic literature, coercion is considered more difficult to implement than deterrence, since it involves forcing the adversary to act.⁶⁴ France has, however, demonstrated its capacity for coercion on several occasions, for example through a show of force in the face of an attempted violation of airspace or a maritime exclusive zone. In early 2015, for example, two Russian bombers were escorted away by the British and French air forces after they flew over the English Channel close to the English coast. Such displays of power must however remain controlled, in order to avoid escalation. In such cases, French doctrine calls for the use of means proportionate to what is at stake—and just enough to force the adversary to yield.

Some strategic signals can appear to serve two purposes. The major military exercises held by Russia fall into the category of strategic signals designed to demonstrate the country's military power (status signaling).⁶⁵ But when such exercises are carried out in western Russia (such as Zapad-2021), they also serve to deter Western countries from challenging Russia's sphere of influence over these border regions.⁶⁶ The very nature of the action and the context in which it is carried out thus influence the message sent. It is because the Zapad exercise is held in the Western Military District, a zone of strategic tension between NATO and Russia, that it has—rightly or wrongly—taken on this message of deterrence, whereas Zapad's regional counterparts, such as Vostok—which takes place in eastern Russia—may take on a different meaning, with a greater focus on status or cooperation when countries such as China or Mongolia are also involved. This can result in misunderstandings between the original intention of the transmitter of the signal and the meaning of the message sent. It is therefore important to accompany the signal with a clear message that explicitly states the original intentions.

63. CICDE, "Réflexion doctrinale interarmées sur l'intimidation stratégique", RDIA-006, p. 21.

64. G. Schaub, "Deterrence, Compellence, and Prospect Theory", *Political Psychology*, Vol. 25, No. 3, 2004, pp. 389-411.

65. A. S. Bowen, "Russian Military Exercises", Congressional Research Service, October 4, 2021, p. 1; "Russia uses these exercises to test military readiness, refine operational concepts, assess new equipment and technologies, and improve command and control".

66. A. S. Bowen, "Russian Military Exercises", *op. cit.*, p. 1; "Russia also may use some of these exercises as a form of coercive signaling toward neighboring states and foreign audiences".

Perception and credibility: The two factors of success of strategic signaling

The nature of the strategic signal is essential to the transmission of the message, since the envelope of the message itself holds meaning. There is a difference between sending a Floréal-class surveillance frigate into the Taiwan Strait as a reminder of France's commitment to international law, and sending in the entire carrier strike group, which would be immediately interpreted by China as a sign of aggression.

The imperative to match means to intention (unity of action) produces the need to maintain good coordination between the decision-maker behind the intention (the politician) and the sender (in this case, the armed forces), right from the signal planning stage. While this may seem an obvious principle, as we shall see below, its implementation is hampered by interministerial and even joint force interference. In addition to this need for coordination, the efficiency of signal transmission depends, as with the transmission of an audio signal, on controlling the transmission parameters. In the case of strategic signaling, two main parameters influence the scope and impact of the signal sent.

First, the signal must be noticed. In 1950, the People's Republic of China tried to signal to the United States that it would support North Korea if US soldiers crossed the 38th parallel.⁶⁷ Washington did not, however, perceive this warning and decided to push on with its counter-offensive to the north, resulting in Chinese intervention. As discussed above, in order to be detected, a signal must produce a differential. It is the creation of this differential in relation to a baseline strategic equilibrium that will attract the attention of the target(s). As we shall see, this differential can be obtained by modifying the nature or size of the vector, or the way in which it is used. Creating a differential is also essential if the aim is to reinvigorate a signal that has been sent previously. An audience whose attention is constantly sought necessarily develops a kind of familiarity with the signal, which has the effect of weakening its impact and therefore its effects. To reinvigorate the impact of the signal, the transmitter must therefore create a new differential in the hope of attracting new attention, for example from third-party intelligence services.⁶⁸ This threshold effect is inherent to the signaling action and must therefore be taken into account and anticipated in the planning stage.

The other parameter is the credibility associated with the signal and the transmitter. The greater the transmitter's credibility in the eyes of the target audience, the more likely it is that its strategic signal will be correctly interpreted. The importance of this factor is demonstrated by the upper hand certain poker players can gain over more novice players on the strength of

67. A. E. Sartori, "The Might of the Pen: A Reputational Theory of Communication in International Disputes", *International Organization*, Vol. 56, No. 1, 2002, pp. 121-149.

68. A. Dyèvre, "Renseignement, facteur humain et biais cognitifs", *Revue Défense Nationale*, Vol. 776, 2015, pp. 80-86.

their reputation alone. This credibility, built up over time, gives them an edge over the competition, since their moves are taken for what they are, or what they appear to be—an undeniable advantage, particularly when a party is trying to convey a message that diverges from the reality of their means or intention (bluffing). There are several ways to build credibility on the international stage. It is essential to ensure that the resources deployed are in line with the initial intention (to achieve unity of action). To continue the analogy, it is difficult to imagine a poker player convincing an opponent with just a small bet. This is where the notion of risk or “costly signaling” comes into play: the higher the cost of the signal, the greater its credibility, since an actor that was not willing to follow through with the intention behind the signal would not mobilize so many resources.⁶⁹ This notion is therefore a corollary of the notion of credibility and an important parameter in the transmission of a strategic signal. There are, of course, a variety of strategic signals, not all of which involve a high level of risk. Nevertheless, it is important to remember that generating a risk (for oneself or for the environment) is a powerful tool for demonstrating one’s determination.⁷⁰ The greater the risk, the greater the credibility of the signaler’s determination in the eyes of the signal receiver. However, care must be taken to ensure that a signal that is constructed with maximum risk in order to compel or deter is not perceived by the competitor or adversary as adventurism or as preparation for aggression, thus resulting in escalation.

A typology of conventional transmission channels

Building on this academic classification of signaling intentions, studying French and foreign examples enables us to distinguish four dimensions of signaling based on the channels and resources used to transmit the message. These can be combined to adapt the military resources employed, while retaining the criteria for a successful signal: credibility, creating a differential, and risk-taking.

Quantitative signaling

This type of signaling is based on a significant change in the volume of forces deployed by significantly increasing the frequency of deployments or the number of military personnel deployed in a given area, either for exercises or operations. The decision of the Bush administration to implement a “troop surge” in Iraq in 2007 in order to signal the United States’ determination to secure the long-term stabilization of the country is a notable example.⁷¹

69. J. D. Fearon, “Signaling Foreign Policy Interests: Tying Hands versus Sinking Costs”, *The Journal of Conflict Resolution*, Vol. 41, No. 1, 1997, pp. 68-90.

70. T. Schelling, *Arms and Influence*, New Haven: Yale University Press, 1966.

71. S. Biddle, J. A. Friedman, and J. N. Shapiro, “Testing the Surge: Why Did Violence Decline in Iraq in 2007?”, *International Security*, Vol. 37, No. 1, 2012, pp. 7-40.

France, meanwhile, has changed tack and, since 2019 and the publication of its first Indo-Pacific strategy, has been conducting “quantitative signaling” in this region, in order to signal to regional partners and competitors its interests and its desire to make an impact and assume its triple identity as a nation bordering the Indo-Pacific, a European nation, and a member of the P5. In 2019, the French carrier strike group was deployed in parallel with the Shangri-La Dialogue in Singapore.⁷² In 2021, the patrol by the nuclear-powered attack submarine (SSN) *Émeraude*, as part of the Marianne mission,⁷³ marked a break with standard practice—and thus created a differential—as the first submarine patrol to be publicized in the media since 2001.⁷⁴ Also in 2021, the Jeanne d’Arc training mission was involved in two major exercises in the Bay of Bengal (the La Pérouse exercise) and Japan (the ARC 21 exercise).⁷⁵ In parallel, the French Air and Space Force organized a deployment of three Rafale, two A330 Phénix, and two A400M Atlas⁷⁶ to the Asia-Pacific region, culminating in the Heifara-Wakea exercise, which was designed to train forces to project power and demonstrate France’s presence capability in the region. More recently, in August 2022, the Pégase deployment in the same region was designed to confirm this capability through several phases (the Pitch Black and Henry Brown exercises) and port visits in Asia.

Qualitative signaling

This type of signaling is based on a qualitative change in the forces, modes of action, or equipment deployed in a theater of operations or during an exercise. Here, the transmitter of the signal seeks to highlight a capability that is likely to alter the balance of power between the actors, such as so-called “disruptive” capabilities like hypersonic weapons—whether these are strictly conventional, dual-capable, or nuclear.⁷⁷

Such signaling actions can also involve the demonstration of unprecedented joint maneuvers, such as the exercise conducted by the Chinese aircraft carriers *Shandong* and *Liaoning* in January 2023 in the Western Pacific, at the same time as the transit of a US carrier strike group, which was interpreted as a way for China to show its mastery of air-sea combat and to assert its determination to respond to US demonstrations of force.⁷⁸

72. “Sommet de Shangri-La: Le ‘Charles de Gaulle’, roi du port de Singapour”, RFI, June 2, 2019, available at: www.rfi.fr.

73. A nuclear-powered attack submarine (SSN *Émeraude*) and a support vessel (BSAM *Seine*) were deployed in the Indian and Pacific Oceans for seven months in 2020-2021.

74. V. Groizeleau, “Retour sur le déploiement indopacifique du SNA *Émeraude* et du BSAM *Seine*”, *Mer et Marine*, April 27, 2021.

75. French Embassy in Japan, “Coopération navale et terrestre dans l’Indopacifique”, 2021 available at: www.jp.ambafrance.org.

76. Ministère des Armées, “Mission HEIFARA-WAKEA”, available at: www.defense.gouv.fr.

77. D. Kunertova, “Les nouvelles armes hypersoniques: Les inconnues connues”, *Le Rubicon*, January 20, 2023.

78. “Two China Aircraft Carriers Perform Exercises Simultaneously”, *Navy Recognition*, January 5, 2023.

Geographical signaling

This type of signaling conveys a strategic intention regarding a specific geographical area through the conspicuous presence of a military capability, either on a one-off basis or over the long-term. This signal may take the form of an exercise or an operational deployment, as long as the effectiveness parameters of the signal (credibility, creating a differential, and risk-taking) are met.

The activities of the People's Liberation Army in the South China Sea can thus be seen as a three-pronged form of geographical signaling, acting as deterrence (deterring China's competitors from operating in the area), compellence (exerting pressure on other states in the area), and status signaling (establishing itself as the only power in the region).⁷⁹ The increased presence of Chinese ships in disputed waters, and the regular flights of bombers near Taiwan and Japan, in the Pacific and in the East China Sea, are all part of this "fait accompli" strategy, which is designed to normalize Chinese military domination of the area.

Similarly, maneuvers and exercises conducted by France and its allies can also act as geographical signals, in order to impose freedom of movement, or even a right to oversee the security situation in a given area. The joint exercise Rhéa,⁸⁰ carried out in March 2021 against the backdrop of tensions with Turkey in the Eastern Mediterranean, brought together numerous military capabilities, combining quantitative and geographical signals. It was presented by the Ministry of the Armed Forces (MinArm) as a means of demonstrating "[France's] desire to help maintain the security and stability of the Mediterranean Basin, alongside its allies".⁸¹

Cooperative signaling

The purpose of cooperative signaling is to demonstrate increased willingness to cooperate with a country or organization. Although the risk of supplying military equipment to a third country is lower than that involved in a military maneuver, the political consequences can be just as significant. The regular rankings of Western countries providing aid to Ukraine, and the debates about the idea of "co-belligerence",⁸² or the risk of escalation created by the delivery of advanced weaponry,⁸³ demonstrate the increased importance attached to cooperative signaling.

79. O. S. Mastro, "The PLA's Evolving Role in China's South China Sea Strategy", *China Leadership Monitor*, December 1, 2020, available at: www.prclleader.org.

80. L. Lagneau, "Méditerranée: Les forces françaises envoient un second message avec un exercice de lutte anti-navire", *Zone Militaire*, March 19, 2021, available at: www.opex360.com.

81. L. Lagneau, "Méditerranée", *op. cit.*

82. J. Grignon, "La 'cobelligérance' ou quand un État devient-il partie à un conflit armé?", *Brève stratégique*, No. 39, IRSEM, May 6, 2022.

83. O. Schmitt, "Qu'est-ce qu'une escalade?", *Le Grand Continent*, January 29, 2023.

Such cooperation, which closely resembles status signaling, can be seen as an indicator of an actor's level of commitment and position on the strategic stage.⁸⁴ The Russian military aid provided to certain African countries, notably through the Wagner Group, can thus be seen as a cooperative signal for status purposes, with Moscow wanting to signal its status as a power in Africa at a time of Western withdrawal. As with other types of signaling, it remains essential to create a differential in the volume or type of aid involved, thus exempting certain routine cooperation from the consequent weight of a strategic signal.

The need for conceptualization in France

Despite growing use of the term “strategic signaling” by political and military decision-makers—and increased inclusion of the concept of signaling in its armed forces strategic programming—France has no formal doctrine on this matter. This absence, coupled with weak interministerial coordination and fluctuating political intention, means that ministries typically take a bottom-up approach to signaling. While this approach gives results—and there would be no point trying to plan all signaling activities well in advance and from the top down—a more structured chain of governance would undoubtedly enable France to make more of its opportunities.

Belated doctrinal inclusion

The term “strategic signaling” does not appear in any of France's *White Papers on Defence and National Security* from 1972 to 2013, although the concept permeates several of the strategic functions outlined in them. The prevention function presented in the 1994 *White Paper*, for example, is designed to “anticipate and prevent the emergence of situations likely to devolve into conflict”, which clearly encompasses actions now described as signaling. The 2008 *White Paper* further builds on this prevention function,⁸⁵ adding that “preventive deployment (... can) prevent the emergence or resurgence of potential crises”, again overlapping with the various types of strategic signals outlined above.

It was not until 2012, when the concept of “strategic intimidation” was proposed by the Centre Interarmées de concepts, de doctrines et d'expérimentations (CICDE) (Joint Forces Center for Concept Development, Doctrine, and Experimentation), that an attempt was made to conceptualize a model of strategic signaling by the conventional forces. Initially focused on “conventional deterrence”, the preface to this document observed the need for a less ambiguous shift toward “strategic intimidation”, most likely to respect the French tradition of reserving the term “deterrence” for the

84. P. Breteau, “Quels sont les pays qui ont le plus aidé l'Ukraine financièrement depuis le début de la guerre?”, *Le Monde*, July 7, 2023.

85. F. Murat, “Gagner la guerre avant la guerre’: Réviser la fonction prévention dans un contexte de compétition permanente”, *Revue Défense Nationale*, Special Issue No. 3, 2022, pp. 247-262.

nuclear domain. The definition provided for the concept closely resembles that of deterrence, other than in the scale of the consequences and the resources employed. Strategic intimidation is thus described as designed to “lead a potential or declared adversary to desist from initiating, developing, or pursuing aggressive action (...) based on the threatened or actual use of armed force”.⁸⁶ This theoretical contribution incorporated all the principles of strategic signaling—“displaying determination” while ensuring that the adversary perceives this intention, for example through “regular evidence of technical and operational effectiveness”⁸⁷—without actually using the term. It proposed numerous modes and spheres of action, from the most classic (military exercises, spending boosts, speeches, etc.) to the most innovative (use of special forces, involvement in the cyber, space, and influence fields)⁸⁸—which is particularly striking given the year of publication (2012), when concepts such as Multi Domain Integration (MDI) did not yet exist.

As theorized in this way, the term “strategic intimidation” was however reserved for France’s competitors, primarily Russia and China, who were regularly accused of using intimidation⁸⁹ to achieve strategic gains, while remaining below the threshold of open conflict.

It is through the ambition to “win the war before the war”, as advocated in General Burkhard’s 2021 *Strategic Vision*, that the necessity of developing a formal concept of signaling has finally become apparent. This document refers to the practices associated with conventional strategic signaling, highlighting that “our deployments, our exercises and, more generally speaking, our [military] activities are a way to show the credibility of our capabilities, to convey strategic messages and to notify our determination to our allies, our competitors and our opponents”.⁹⁰

Subsequently, and in fact very recently, the term “strategic signaling” has appeared in official strategy documents, and was even introduced as an objective in the 2022 *RNS*, which states that France is “developing its capacity in strategic anticipation and intelligence, relative to its competitors, and confirming and bolstering its position in the region’s politico-military multilateralism by increasing its training capacity and, if necessary, encouraging the emergence of ad-hoc structures”.⁹¹ It also calls on the armed forces to have “a variety of capability options for deep strikes whether the situation is one of first entry, support to a coalition operation, retaliatory actions, or strategic warning”.⁹² These references are not, however,

86. CICDE, “Réflexion doctrinale interarmées sur l’intimidation stratégique”, RDIA-006, p. 9.

87. *Ibid.*, p. 11.

88. *Ibid.*, p. 22.

89. The term was thus used in the French president’s speech on defense and deterrence on February 7, 2020, and in the MinArm’s 2021 *Strategic Update*.

90. Ministère des Armées, *Strategic Vision of the Chief of Defense Staff*, October 2021, p. 21.

91. SGDSN, *National Strategic Review 2022*, p. 46.

92. *Ibid.*, p. 51.

accompanied by a concrete definition of the concept or a list of the resources allocated to implement it.

A bottom-up tradition of strategic signaling

Despite its limited inclusion in doctrine, interviews conducted for this study at the MinArm confirm that the French armed forces are investing in strategic signaling, both in terms of planning—as with the ORION exercise, for example—and reaction. However, planned signaling actions, i.e., those that comply with the structured development set out above (defining an intention, structuring the transmission and nature of the signal, analyzing the audiences and the impact of the signal) are far rarer than reactive signals.

There are two reasons for this. Firstly, the armed forces carry out a wide range of activities with signaling potential that do not necessarily have the benefit of being planned in advance. However, some of these numerous activities may be the subject of a reactive signaling activity, depending on their execution and context. The armed forces do not hesitate to make use of this option if necessary, since, as illustrated by the Shannon-Weaver model in the first part of this report, the transmission of a signal is conditioned by a context. Today, against the backdrop of the war in Ukraine, the ORION exercise conveys a different message to the one anticipated when it was being planned in 2021. This adaptation to the context, and the way in which the French armed forces have been able to generate signaling capital from the hundreds of activities they have organized, partly explains this bottom-up impression.

This is compounded by various difficulties in generating planned strategic signals, which has the effect of limiting their number. The first—and most important—of these is undoubtedly the difficulty at the political level of explicitly stating one's strategic intentions with regard to a competitor or an area of tension. This absence of political intention clearly hinders the full use of signaling as a tool. The Conseil de défense et de sécurité nationale (CDSN) (Defense and National Security Council) sometimes fills this gap and occasionally produces top-down signals from the political level.⁹³ The armed forces also have their own operational military strategies at the geographical level—along with an ad hoc oversight procedure⁹⁴—that, in the absence of political intention, provides a basic framework for planning signaling activities.

However, greater formalization of political intention, coupled with improved interministerial dialogue, would enable France to increase the proportion of planned signals, which are inherently more effective than reactive signals. This objective must be coupled, at the armed forces level, with an awareness of the signaling potential of the activities conducted,

93. Interviews at DGRIS and EMA, conducted between October 2022 and January 2023.

94. This consists of the EMA's strategic anticipation chain.

whether major exercises or cooperative activities. Indeed, internally, these activities sometimes tend to take second place to operational activities. The new environment of competition and contestation, combined with the development of a new “influence” strategic function, should accelerate this awareness. The French Defense Staff (EMA; état-major des armées) has already begun work in this area, for example by identifying and ranking military exercises with signaling potential.⁹⁵

The link between strategic signaling and “influence”

The challenge of conceptualizing conventional strategic signaling—and therefore of its implementation—stems in part from its cross-functional nature, since it permeates all strategic functions and thus requires careful coordination and an overall vision. In the first instance, signaling is part of the deterrence and prevention functions, but also of the “knowledge-appreciation-anticipation” function (targeting the competitor in advance, then understanding the impact of the signal afterward), “intervention” (since a signal can be a military operation), “protection” (as part of cooperative signaling, for example), and now “influence”, a new function created in the 2022 *RNS*. While it may be useful to see strategic signaling by the armed forces as akin to a military influence strategy, it should not be reduced to this, and strategic “communications” and “signaling” should not be understood to mean the same thing.

Semantic confusion

In French doctrine, “strategic communications” are described as a technical and operational process “that enables any activity to be conceived and conducted (...) as a coherent, credible, and effective message to the main actors that are aware of it, whether this be a physical action or a statement in any form”.⁹⁶ While this definition represents a useful starting point for planning strategic signaling, it remains limited to military operations, and even to the MinArm’s institutional communications (for example in terms of recruitment, or defense budgets). It is primarily through this ministerial communications strategy—which should be distinguished from StratCom⁹⁷ in the NATO sense—regarding the exercise carried out or the military vector deployed that the EMA and political bodies shape the strategic message they want to convey to their partners or competitors. Yet, this message can accompany the signal but must not replace it.⁹⁸ As a result, such communications appear to be under-strategized, primarily aimed at an audience that is already familiar with and sympathetic to the cause supported

95. Interviews at EMA, conducted between October 2022 and January 2023.

96. CICDE, DIA – 3.10.0, “Stratcom des opérations”, June 29, 2022.

97. Strategic communications.

98. CICDE, “Réflexion doctrinale interarmées sur l’intimidation stratégique”, RDIA-006, p. 19.

by the armed forces, and more of an attempt at transparency or opportunism than a strategic signal.

This conception therefore limits the application of NATO's AJP-10 doctrine,⁹⁹ under which member countries are expected to use several sovereign and strategic domains to express their power and send strategic signals. It also covers broader communications actions, which consist of the coordinated and appropriate use of NATO's communications activities and capacities—public diplomacy, public affairs, military public affairs, information, and psychological operations, as appropriate—in support of the Alliance's policies, operations, and activities, in order to advance NATO objectives.

If we compare this organizational structure to the NATO communications strategy, it is clear that most of the communications activities currently carried out by the French armed forces concern military public affairs, with no explicit place reserved for strategic signaling. France's operational strategic communications doctrine, however, calls for a stronger interministerial dimension, described as the capacity “to organize and use the capabilities of each ministry to serve the interests of a state, a group of states, or the international community by acting in the domains of perception”¹⁰⁰ and thus suggests potential for development in this area.

Multi-level strategies

While this study focuses specifically on strategic signaling via military vectors, its conception and application clearly form part of a broader picture, which originates in a political decision taken by the French president, who is the head of the French armed forces and of the nation's defense strategy. Signaling, which is designed to shape a conflict at the strategic level, by imposing the state's will and displaying its credibility, can therefore draw on France's national influence strategy, which is currently being drawn up at the interministerial level. Influence can support strategic signaling through effective communication and amplify an action in various spheres of perception. However, the interministerial nature of strategic signaling means that it cannot be reduced to a simple tool of influence but is rather a signal designed to have an effect on a theater of operations.

As such, signaling may form part of France's military influence strategy (SMI; *stratégie militaire d'influence*), alongside other components such as civil-military cooperation, Key Leader Engagement,¹⁰¹ psychological operations, and military public affairs. Both

99. *NATO Strategic Communications Policy*, NATO Standardization Office, Allied Joint Doctrine for Strategic Communications, March 2023.

100. CICDE, DIA – 3.10.0, “Stratcom des opérations”.

101. Key Leader Engagement involves building relationships with high-ranking officials over time, and with sufficient strength and depth, so that they can then support France's interests in times of crisis or conflict. These meetings can also be used to gather information.

changes to and the suspension of physical military activities can generate perceptions that are often stronger than signals conveyed solely through classic channels of influence in the immaterial field. The SMI, which already has its own doctrine, appears to be a logical extension of the national influence strategy at the level of the MinArm, while StratCom in the specifically NATO sense remains at the state level.

In conclusion, it is important to recognize that all operational activities have the potential to be an act of strategic signaling and carry within them the seeds of a message that must be controlled to avoid any form of misinterpretation. This must involve a two-stage approach: first, planning an activity with the primary aim of delivering a message; second, the more traditional task of structuring the message to accompany an operational or training activity. Strategic signaling should be one of the key components of French military maneuvering, in balance with the other functions of the armed forces.

The need for active support for conventional signaling

Thus, there is a lack of theory in this area, and numerous challenges must be overcome in order for French military activities to adopt an organized signaling approach. While control of the process to the same level as that acquired by the deterrent forces is difficult to achieve due to the diverse range of transmitters and channels, a doctrine and a governance structure for conventional strategic signaling can be proposed—but they need to be actively supported.

Upstream, the politico-strategic intention behind the use of signaling requires clarification, notably through the publication of framework documents, both at the politico-military level and in the specific domain of strategic signaling. In relation to the execution phase, an overhaul of governance would be similarly beneficial, with the creation of central and regional coordinators and a stronger interministerial dimension. Finally, downstream, specific adaptation of targeting tools can help with the vital task of measuring the effectiveness of the signal.

Upstream, clarifying the politico-strategic intention

In an era of strategic competition, signaling is designed to demonstrate a state's intention, willingness, and ability to act, despite the risk inherent in such action. To achieve this, a clear, long-term vision of the politico-strategic intention is necessary, in order to avoid signals contradicting one another over time. This intention must then be fed down to the interministerial level, in order to ensure coherence, effectiveness, and the involvement of other levers of power, and then within the MinArm, as the main effector of conventional strategic signaling.

Bodies producing strategy at the state level, along with decision-making bodies such as the Defense and National Security Council (CDSN) and the Conseil restreint (CR) (Restricted Council), are essential to the development of a coherent strategy, and to the establishment of audible and coherent “strategic signals”. Indeed, as stated in the 2022 *RNS*, it is necessary to think about the “what” of “strategic signaling”, rather than jumping straight to the “how”, as is all too often the case. This problem has been identified by Admiral Michael Mullen, former United States Chairman of the Joint Chiefs of Staff:

We've come to believe that messages are something we can launch downrange like a rocket, something we can fire for effect. (...). We need to worry a lot less about how to communicate our actions and much more about what our actions communicate.¹⁰²

This involves, first and foremost, following a principle of construction derived from scientific theories and applying them to the conventional forces: drawing up the intention and political message, identifying the target audiences and relay actors, identifying the framework for expressing the signal, translating this message into one or more military effectors, engaging with the effectors, and, finally, analyzing the impact of the message on the target audiences. This logical sequence ensures unity of meaning and reception of the message by the target audiences.

Once decisions have been taken by the CDSN or the CR, an interministerial approach is then required, based on the DIMEFIL (Diplomatic, Information, Military, Economic, Financial, Intelligence, and Law Enforcement) framework set out in NATO doctrine. In addition to the military channel, the effector for strategic signaling, each of the other channels must be mobilized:

- **Diplomatic:** How can the activity of an embassy, a trip by a high-ranking official, or a speech to an international organization, for example, reinforce the credibility of the strategic signal? How can a diplomatic offer, such as the Minsk agreements proposed by Russia in December 2021, complement military activity?
- **Information:** activity in the cognitive sphere and the infosphere needs to be thought through in advance, to ensure that the signal is properly disseminated to the target audience.
- **Economic and Financial:** a coercive signal sent by an armed force can be strengthened and made credible by an aggressive package of economic sanctions against an adversary.
- **Law Enforcement:** a strategic signal sent via a military vector can be backed up by a lawfare approach, i.e., through strategic use of the law to vastly increase its effectiveness—as with China's policy of criticizing the law of the sea in international bodies, alongside its military presence in the South China Sea.¹⁰³

This framework can also be combined with the four types of strategic signaling proposed in this study (quantitative, qualitative, cooperative, and geographical), while maintaining the criteria for successful signaling (credibility and creating a differential). Finally, the scale of the signal must be appropriate to the degree of risk acceptance, and, as with the control of

102. M. Lynch, "Mullen's Strategic Communication", *Foreign Policy Magazine*, August 31, 2009, available at: www.foreignpolicy.com.

103. A. Férey, "Towards a War of Norms? From Lawfare to Legal Operations", *Focus stratégique*, No. 108, Ifri, April 2022.

nuclear strategic signaling, it must not provoke uncontrolled escalation. This scaling of intensity is essential: it is based on complete knowledge of all the means available to politicians to transmit a signal, and requires a high degree of coherence between the party ordering the signal (in this case, the armed forces) and the political authority. The range of options allows for a scaled demonstration—adapted to each target—and may cover all domains and environments of conflict, from the deep seas to space and cyberspace.

Execution: Reforming governance and transmission

In addition to the lack of clarity regarding the intention upstream of sending the signal, which stems in part from a lack of strategy and anticipation, the difficulties with promoting strategic signaling in France also stem from an inadequate chain of governance and transmission.

Establishing standard processes within the Ministry of the Armed Forces

As discussed above, the French armed forces typically produce strategic signaling via a “bottom-up” or even retrospective approach. To ensure that signaling is deliberate—and not merely opportunistic—it needs to be considered right from the operational planning stage. This should not, however, preclude seizing the opportunity of an operation that has already been planned, for example in the event of a rapid change in the geopolitical situation. Ultimately, the aim is to assess the full range of conventional activities carried out by the armed forces, to distinguish those with signaling potential—which can be identified using the typologies presented in this study—and to operationalize the signaling implementation chain.

This work of identifying and executing conventional strategic signaling, internal to the MinArm, could be conducted by the J-IM (military influence) office for activities that fall under the responsibility of the Centre de planification et de conduite des opérations (CPCO) (Center for the Planning and Execution of Operations) within the EMA, in order to integrate this reflection within a broader dynamic of developing the military influence strategy. The “professional” expertise of the J-IM in influence operations could be usefully applied to all activities with strategic signaling potential, so that this dimension is systematically taken into account from the planning stage through to the execution of operations.

The J-IM could bring together other EMA offices responsible for anticipation, planning, and communications activities, as well as other organizations that may need to be involved, such as the DGRIS (Direction générale des relations internationales et de la stratégie; Directorate-General for International Relations and Strategy) as the lead agency for political strategy, the COMCYBER (Cyberdefense Command) for cyber influence

warfare operations specifically, and the DICOD (Délégation à l'information et à la communication de la Défense; Defense Communications and Information Delegation) for institutional communications. While nuclear strategic signaling would remain a direct prerogative of the Élysée, it would be beneficial to strengthen the links between nuclear and conventional strategic signaling.

This planning structure would make it possible to impose coherence between the different branches of the armed forces, notably at the deployment level, and in particular in the Indo-Pacific, where all three branches are deployed without any obvious coordination in the eyes of outside observers (both partners and competitors).¹⁰⁴ If such coherence does exist, it is not always perceived or understood. Establishing such coherence across joint force vectors would ensure greater clarity of the message sent.

The need for greater interministerial coherence

Interministerial coherence is crucial during the planning and design of the message. It remains necessary during execution and transmission of the strategic signal in order to avoid redundancies and contradictions and to ensure use of the most appropriate vector for the message.

This synchronization also makes it possible to propose alternative solutions to military effectors if appropriate, such as a visit by a high-ranking official to a crisis zone, publication of a press release, or a speech by a high-ranking diplomat. While such actions cannot have the same impact as an exercise or a deployment, a speech can nonetheless accompany a military movement with a view to boosting its credibility, as demonstrated by the inseparable nature of declaratory policy and kinetic capabilities in the field of nuclear deterrence.

In addition, while it is relatively easy to synchronize kinetic effects, it is more difficult to combine them with non-kinetic effects, which are often planned well in advance and whose effects can materialize in the long term. The absence of a common, overarching strategy also makes it difficult to effectively influence competitors, who are able to take advantage of the resulting gaps. This principle of concentrating efforts requires significant decompartmentalization in order to avoid a “silo” mentality.

Thanks to regular meetings, an effective synergy has already been established between the Ministry of Foreign Affairs (MAE) and the MinArm. Notably, the MAE says it is unsurprised by the decisions taken by the MinArm and feels that “objectives are aligned, strategic decisions are shared”, and that there is “good convergence”.¹⁰⁵ A successful major military

104. Interviews at the MinArm in the second half of 2022.

105. Interview with the Sub-Directorate for Strategic Affairs and Disarmament, MAE, October 2022.

exercise such as ORION serves the aims of both the armed forces and French diplomacy.

However, while this relationship runs smoothly in times of crisis, there is still a lack of structured and regular dialogue for planning and implementing strategic signaling activities in advance. For the purposes of such interministerial coordination, the Secrétariat général de la défense et de la sécurité nationale (SGDSN) could take the lead on interministerial coordination of strategic signaling. This would give it the ability to arbitrate on any points of friction between ministries. However, it would require it to be given fresh political investment and to eventually evolve into a structure equivalent to a National Security Council. Second, with the support of units dedicated to strategic signaling and influence within each relevant ministry, the SGDSN would have the necessary overview to orchestrate the implementation of such strategies. It could also hold meetings between “key contacts” at each ministry in order to define in advance the signals to be transmitted, and also play a regulatory role as part of the National Influence Strategy that is currently being drafted.¹⁰⁶ Finally, the role of the Service d’information du gouvernement (SIG) (Government Information Service), an eternal thorn in the side of strategic communications at the state level, also needs to be redefined to determine how it can support strategic signaling activities.

The potential value of regional “key contacts”

In addition to coordination between central government departments, France’s extensive diplomatic and military network abroad should be included in the planning and implementation of strategic signaling. These actors on the ground are among the best placed to advise on the targets, the frequency, and the format of the chosen channel, and then to verify the “decoding” and “interpretation” by the “receivers” of the signals emitted by France. Such expertise is notably held by embassies and, in the case of activities carried out by the armed forces, by defense attachés and military support personnel. It would therefore seem advisable to enhance the role of this network of defense attachés as sensors and interpreters of the local context in which they operate, while ensuring that information is properly fed into the development of the strategic signal.

Similarly, from the perspective of combining efforts, the responsibilities of regional ambassadors (for example in the Mediterranean, the Sahel, the Indo-Pacific, the Atlantic, the Indian Ocean, and at the Poles) could be expanded as part of an influence and signaling strategy. As noted in a 2020 French Senate report on special ambassadors¹⁰⁷ (also known as “thematic

106. P. Buhler, “Stratégie nationale d’influence: Une architecture à inventer”, *Revue Défense Nationale*, No. 857, 2023, pp. 5-10.

107. V. Delahaye and R. Féraud, *Rapport d’information sur les ambassadeurs thématiques*, No. 726, Commission des finances, Sénat, September 30, 2020.

ambassadors”), the mandate of these diplomats remains unclear and needs to be clarified if they are to play a significant role, particularly in regional coordination. Their links to the joint forces commanders (COMIA) thus need to be strengthened so they can better advise the central level on the relevance of strategic signals sent to a third party, and act as regional “key contacts” in the planning phase, in liaison with all the diplomatic missions in the region and the COMIA. Finally, the systematic introduction of political advisors (POLADs) within these joint commands abroad could help strengthen the integration of military actions into the political context of the host region.

This organizational framework would maximize the chances of successful “interpretation” by the target “receivers”, while requiring them to advise the central level on the frequency of the strategic signaling action, taking into account the “noise(s)” produced by geopolitical or domestic affairs in relation to a particular target (such as a domestic crisis, a regional summit, or an election), which could render the signal inaudible—or even counterproductive.

Downstream: Measuring the impact on the “receiver”

Once the message has been sent via the appropriate channel and with the intention behind it, it is necessary to be able to measure its impact on the target audience, since a signal that has no impact or is misinterpreted is no signal at all. The techniques of full spectrum targeting (FSpecT) and new tools for exploiting big data and adopting the perspective of the adversary may help achieve this by enabling better understanding of the target in advance as well as analysis of the subsequent impact.

The importance of targeting

Mapping of the target audiences, or “receivers”, is a key element in any strategic signaling, since this makes it possible to adapt the message to specific audiences and facilitates the analysis of its effects. Such mapping is a preliminary step in shaping the message so that it is adapted to the culture or context of the target audience. The targeting approach is thus explicitly mentioned in the CICDE’s doctrinal reflection on strategic intimidation as making it possible to identify the “possible points of application of the action, both material and immaterial”, while exercising “discernment” in order to avoid provoking unintentional escalation if the adversary’s red lines have not been clearly taken into account.¹⁰⁸

It is also important to be able to evaluate the effectiveness of an act of strategic signaling by ensuring that the message has reached the “receiver” and that the latter has understood the content, meaning, and

108. CICDE, “Réflexion doctrinale interarmées sur l’intimidation stratégique”, RDIA-006, p. 12.

significance of the message, without any misinterpretation. Feedback and lessons learned can be drawn from this kind of analysis in order to subsequently adjust the “message” and “channel” to the target audience. The echo or impact of such a communication maneuver must be sought in numerous dimensions, since it can echo off several “surfaces”: national media such as the written press or television, the internet and in particular social media, but also in some cases public demonstrations. Several targets can also be targeted within the same country, from civil society to the politico-military sphere, and/or intellectual elites.

In this context, the intelligence services play a crucial role—notably through the “systemic analyses”¹⁰⁹ produced by the Targeting unit of the Direction du renseignement militaire (DRM) (Directorate for Military Intelligence)—as do other organizations such as the Centre interarmées d’actions sur l’environnement (CIAE) (Joint Center for Actions on Context), which focuses specifically on identifying possible levers of influence both upstream and downstream. This is particularly the case since France’s adversaries provide very detailed coverage of exercises or major maneuvers presented internally in strategic signaling terms: the ORION exercise, for example, was covered by several articles in the Russian-language press.¹¹⁰ Greater investment in cyberspace surveillance and better coverage of open sources by the intelligence services could therefore be useful for refining France’s strategic signaling policy.¹¹¹ The current structures, such as the DRM’s Centre de recherche et d’analyse du cyberspace (CRAC) (Cyberspace Research and Analysis Center), appear to be underpowered for the scale of these tasks, especially as the latter is focused on identifying adversaries’ capabilities and movements in cyberspace, while such a mission would also require it to monitor the impact on partners. Here again, the role of defense attachés could be expanded to provide more detailed analyses of the impact of French deployments and exercises in the countries to which they are posted.

Finally, a study of FSpect techniques is also useful and argues in favor of bringing these functions closer to the work of the J-IM. A comparison with the field of kinetic targeting shows that a strategic signal cannot be assessed with the same tools as a “material” action, whose impact can be measured in physical terms. Upstream of a kinetic action, weaponing can be used to

109. Report of the hearing of General Christophe Gomart, Director of Military Intelligence, before the Commission d’enquête relative aux moyens mis en œuvre par l’État pour lutter contre le terrorisme depuis le 7 janvier 2015, Assemblée Nationale, May 26, 2016.

110. See, for example, M. Makarichev, “Во Франции начались крупнейшие в истории военные учения ‘Орион’ по ‘подготовке к войне’ [The French embark on Orion, the biggest military exercise in history designed to ‘prepare for war’]”, *RG*, February 25, 2023, available at: www.rg.ru; and M. Kryukov, “Во Франции начались масштабные учения с целью подготовки к ‘войне высокой интенсивности’ [France begins major exercises in order to prepare for ‘high-intensity conflict’]”, *TV Zvezda*, February 25, 2023, available at: www.tvzvezda.ru.

111. On this topic, see the chapter “Sources ouvertes, cyber, data: Le renseignement et la révolution de l’information”, in O. Chopin and B. Oudet, *Renseignement et sécurité*, Paris: Armand Colin, 2019, pp. 169-194.

predict the effect of a munition on a given target, based on the conditions under which it is used, its parameters, and its nature. Collateral damage can also be the subject of an assessment useful to the decision-making process. Once the strike has been carried out, a battle damage assessment provides a concrete, quantified assessment of the damage that has actually been caused.

Collateral damage is difficult to control, especially as a message may be perceived in different ways by different target audiences, such as the general public, minorities, elites, leaders, and private companies. For cultural, linguistic, historical, social, or political reasons, cognitive bias can produce different perceptions of the same message, creating a risk of the message not reaching its target.

Making use of innovative tools

In addition to an organic reorganization to improve the way feedback is taken into account downstream of strategic signaling and to measure the extent to which the desired final effect has been achieved, as well as upstream in a population-targeting approach, several technical solutions and innovative tools could be used.

The new possibilities for audience mapping presented by the algorithmic exploitation of big data from social media represent an interesting opportunity for strategic signaling.¹¹² Similarly, “red teaming”, which involves adopting the perspective of the adversary in order to better understand its interests and actions,¹¹³ also appears to be worth exploring, as the CICDE identified back in 2012.¹¹⁴ This kind of modeling can be done using tools that are currently of renewed interest to the military, such as brain games, wargames, and serious games.¹¹⁵ They vary in their degree of sophistication, from complex game mechanisms to simply putting researchers, military personnel, or civilian defense staff in a competitive situation, and can help provide insight into the strategic environment and improve knowledge of competitors’ and allies’ ways of thinking. They can help determine how a message will be interpreted or identify the best channel for sending a strategic signal. Finally, wargames themselves can be used to send a signal when they are publicized as part of a strategic communications approach, as demonstrated by the major impact of a wargame conducted by

112. Direction du renseignement militaire, “Intelligence artificielle et renseignement militaire”, *Revue Défense Nationale*, No. 820, 2019, pp. 107-116.

113. S. Caplain, “Penser son ennemi. Modélisations de l’adversaire dans les forces armées”, *Focus stratégique*, No. 82, Ifri, July 2018; H. Fayet and A. Férey, “Imagining Beyond the Imaginary. The Use of Red Teaming and Serious Games in Anticipation and Foresight”, *Briefings de l’Ifri*, Ifri, March 30, 2023.

114. CICDE, “Réflexion doctrinale interarmées sur l’intimidation stratégique”, RDIA-006, p. 12.

115. There is a growing French-language literature on these subjects. See, in particular, A. Bourguilleau, *Jouer la guerre: Histoire du wargame*, Paris: Passés/Composés, 2020; and T. Fouillet, *Wargaming: Un outil de recherche stratégique*, Paris: L’Harmattan, 2022.

the Center for Strategic and International Studies concerning a Chinese invasion of Taiwan.¹¹⁶

Foresight methods can also be useful in planning, conducting, and analyzing the impact of a strategic signal, in particular by taking a counterfactual approach. The war in Ukraine presents a particularly interesting example, as France and other European countries appear to have been unable to correctly interpret the signals sent by Russia, unlike the United States, which had the appropriate analyses and sensors.¹¹⁷ In the long term, improved foresight methods—and, more broadly, additional investment in foresight work by France’s sovereign institutions¹¹⁸—may therefore make it possible not to better predict the future, as this is not the purpose of these methods, but rather to envisage possible futures and the potential strategic signals that could be transmitted by the actors involved in these scenarios.

In summary, if France is to actively support strategic signaling, it must first define a national strategy on this matter, with the aim of better supporting the overall political vision, prioritizing and scheduling strategic activities more effectively, and gaining greater legibility and credibility among partners and competitors alike. Decision-making and implementation might be organized in three layers, each of which could include actors from outside the MinArm, in order to ensure the overall coherence of military activities. First, a level of politico-military leadership and decision-making at the level of the Chief of the Defense Staff, in conjunction with the DGRIS, in which political decisions and methods are led by the CDSN or CR, chaired by the French president. Second, a strategic steering level, which could be coordinated at the interministerial level by the SGDSN, and led internally at the MinArm by the CPCO. And finally, an implementation level, under the interministerial coordination of geographical ambassadors and the military responsibility of the COMIA (joint forces commanders) in their designated areas of permanent responsibility (*zones de responsabilité permanente*, or ZRP).

116. M. F. Cancian, M. Cancian, and E. Heginbotham, “The First Battle of the Next War: Wargaming a Chinese Invasion of Taiwan”, CSIS, January 9, 2023.

117. There have been numerous analyses of the “failure” of intelligence services, and of European governments more broadly, to “predict” the war in Ukraine. See F. Gaub and Y. Michel, “Pourquoi s’est-on tant trompé sur l’invasion de l’Ukraine?”, IRSEM podcast “Le Collimateur”, February 14, 2023.

118. F. Gouttefarde, *Défense - Environnement et prospective de la politique de défense*, Avis n° 3465 fait au nom de la commission de la Défense nationale et des forces armées sur le projet de loi de finances pour 2021, tome II, Paris: Assemblée nationale, October 2020.

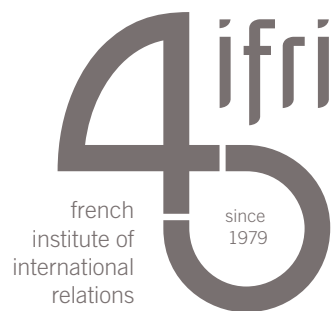
Conclusion

Strategic signaling is neither a novelty nor a fad, but rather an essential tool for “winning the war before the war” and thus controlling escalation. However, in order for it to be operable and effective, there is a need for more robust official protocols, organizational structure, and procedures. At a time when the boundary between peacetime and wartime is blurring, against a backdrop of increasingly intense power rivalries, all military activity must be seen as an operation with the potential to deliver cognitive effects to one or more targets.

Implemented in a coherent, structured, and coordinated way, strategic signaling is designed to “bend our opponent’s determination as of the competition phase”, as it is set out in the Chief of the Defense Staff’s *Strategic Vision*. In the field of perceptions, the credibility of forces, the coherence of the system, the coordination of actions, and political determination are all essential and form an indissociable whole. Strategic signaling has essentially developed empirically in France in a bottom-up, reactive way, but a concerted interministerial approach, prior to action, would enable better synchronization and synergy of the various sovereign levers and maximize the efficiency of the signal sent.

Once they have been conceptualized and organized, strategic signaling operations must be implemented by applying a method and following a number of key stages. The first step is to define the relevant levers by which the state targeted by the signal can be reached. The next step is to identify the best channel for transmitting the message, by assessing the potential impact on the intended target. All of the components contributing to the efficiency of a strategic signal—physical as well as psychological maneuvers, actions in the information sphere and the cyber domain—must be evaluated and combined as effectively as possible in order to ensure the success of the signaling maneuver.

To realize this ambition, the pursuit of coherence and efficiency must first be set as an objective at the political level, and increased consultation is required both at the interministerial level and within the MinArm, including the EMA, the DGRIS, and the three branches of the armed forces. There is also the need for the establishment of a body of doctrine, a change in attitudes and practices, and the creation of an interministerial structure responsible for orchestrating implementation of the political intention in terms of strategic signaling.



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