CREATING AN ORGANIZED CRIME SENTINEL:

Towards the development and implementation of a strategic early warning methodology for law enforcement

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Executive Summary:

In January 2004, Criminal Intelligence Service Canada [**CISC**] initiated Project SOOTHSAYER. The goal of the project was to develop a fully functional strategic early warning system [**SEWS**] for organized and serious crime in Canada. The project had three broad objectives: a) the development of a methodology suited to warning for law enforcement; b) the establishment of a reporting mechanism; c) the development of dissemination and communications methods (i.e. a product line). **SEWS** is not to be confused with crime pattern analysis, which looks at specific crime types such as burglaries and assaults. Rather, **SEWS** focuses on emergent events and phenomena – be they local, national or international, demographic, economic or technological – that could potentially alter the organized and serious crime situation in Canada. Although strategic warning systems have been utilized in other fields such as public health and national defense, law enforcement has only begun to understand the utility of strategic analysis and warning in its fight against organized crime. Thus, **CISC** sought out the support of the Country Indicators for Foreign Policy (**CIFP**) project at Carleton University, which had a demonstrated expertise in warning for state failure, risk assessment and early warning. The purpose of this paper is to present the methodological approach developed by **CISC** in partnership with **CIFP**. The paper unfolds in five parts. In the first part of the paper we examine the **CISC** purpose and rationale behind the creation of **CISC** and the **SEWS**. In the second part of the paper we identify the relevant components within the **CIFP** project that are featured in the CISC-**SEWS** project. In the third part of the paper we review the methodology pertinent to the creation of a Criminal Intelligence capability. In the fourth part, the project's scanning components are identified. The fifth and final part of the paper concludes with directions for future research.

1. Beware the Ides of March: CISC, SOOTHSAYER and SEWS

Criminal Intelligence Service Canada was formally created in 1970 as a result of a 1966 decision at a Federal/Provincial Conference of Attorneys General on the subject of organized crime, which identified the need to create a body to share criminal information and intelligence within the law enforcement community. The platform for information sharing, Automated Criminal Intelligence Information System (ACIIS), was launched in 1976. For 32 years, **CISC**'s principal function was the coordination of national operations against selected organized crime targets.

In 2002, following a Strategic Review, **CISC** recast itself as an agency whose main purpose was to provide strategic criminal intelligence analysis. The Strategic Review had underlined the need for a strategic focus in the collection, collation, sharing, analysis and production of timely criminal information and intelligence. **CISC** has a Central Bureau, located in Ottawa, that insures the maintenance of ACIIS and guarantees that the nine independent Provincial Bureaux maintain common service delivery standards. With this Provincial infrastructure and a total membership of over 375 federal, provincial, regional and municipal law enforcement agencies, **CISC** Central Bureau is uniquely positioned to fulfill its core mission: to be a strategically-focused organization which ensures the timely exchange of criminal intelligence among **CISC** member agencies, and to be a centre of excellence in support of the national effort to detect, reduce and prevent organized and other serious crime affecting Canada.

In August 2003, Criminal Intelligence Service Canada (**CISC**) was tasked by its Executive Committee with developing an early warning capability for organized and serious crime in Canada. This undertaking was part of a larger enterprise, the purpose of which was to transform **CISC** into the principal provider of strategic criminal intelligence analysis for the Canadian law enforcement community. **CISC** thereby turned away from its national operations coordination function.

The goal of the Strategic Early Warning System [**SEWS**] for organized and serious crime in Canada is to provide the **CISC** community with over-the-horizon forecasts that will warn of emerging domestic and international organized criminal threats. These forecasts therefore not only focus on groups, activities and commodities that have yet to be introduced into the Canadian criminal marketplace, but also on the direction those already present in Canada will take within a six to twenty-four month time frame.[1] **SEWS** is therefore not to be confused with crime mapping.[2] The development of this early warning capacity is a priority for **CISC** and has been identified as critical to the successful fulfillment of the agency's strategic mandate. As a result, new personnel were hired and "fenced off" for the purposes of the **SEWS** project.

Whether it is in the field of public health, national security or law enforcement, the overall purpose of intelligence is to reduce risk and uncertainty for decision-makers and the publics they serve. In other words, intelligence is meant to avoid or, at the very least, mitigate crises. Once a situation has reached the level of crisis management, intelligence is of very little utility. Thus, intelligence must answer the question: what do we need to do today to prepare for tomorrow?

In order to fulfill this important mission, intelligence agencies and services must be able to provide their customers with strategic, tactical and operational intelligence, all of which are based on the same information. The difference between the three is the way the information is utilized, not the information that is used. Strategic warning and strategic analysis are therefore essential parts of the intelligence cycle and function.

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[1] It is this timeframe which makes these warnings *early*.

[2] Keith Harries, PhD. (1999) *Mapping Crime: Principle and Practice.* Rockville, MD: National Criminal Justice Reference Service. http://www.ncjrs.org/html/nij/mapping/pdf.html

The purpose of warning is essentially to offer customers an over-the-horizon and big picture look at the future threat environment. Whereas tactical and operational intelligence offer a clear line of sight or, as some may say, tunnel vision on a given target, strategic warning and analysis offer context and peripheral vision.

Policing has historically been a tool for maintaining public order, and responding to events, people and groups who threatened this order. The importance of policing has increased in Western societies as populations have become increasingly urban, atomized and diverse, and as the nature of the most important threats we face has shifted from the national security level to those of society and/or the individual. The threat environment is no longer dominated by a superpower confrontation, but rather by issues such as public health, environmental degradation and crime. In such an environment, policing assumes a new importance, as well as heightened level of currency.[3]

Until recently, law enforcement worked wonderfully as a crisis management tool (reactive rather than proactive), but given the new threat environment and public expectations of security it has had to recast itself. In order to do so, the notion of intelligence-lead policing has emerged. This basically means that law enforcement will use intelligence in order to redirect some of its scarce resources to emerging issues in the hopes of either halting their further development, or mitigating their negative impacts. This is not to say that policing will turn away from its day-to-day functions of maintaining public order, but rather that it has to develop the capacity to identify and respond to a phenomenon before it achieves full impact. In other words, law enforcement is attempting to develop its peripheral vision.

Although this is a novel project insofar as **CISC** is one of the few law enforcement services/agencies in the world seeking to develop this capability, experience in other fields such as public health and national defense has proven its utility and its centrality in the intelligence process. In other words, if we are to become truly intelligence-lead, strategic warning and analysis must be fully developed.

Historically, it is not the development of a warning capability that has been problematic. Rather, it is the maintenance of that warning capability as the day-to-day operational needs or crisis management often trump long term, over-the-horizon analysis. In the play *Julius Caesar*, Shakespeare eloquently captured the essence of warning and the other challenges it faces. "Beware the Ides of March!" is what the Soothsayer cries to Caesar as he makes his way to the Roman Senate and his assassination, to which the doomed man responds "He is a dreamer; let us leave him…" (Act I). Thus, even when heard, those who are entrusted with acting upon warnings often ignore them. This failure to act, often identified as an intelligence failure, can be due to a number of factors ranging from wishful thinking and blindness, to a lack of specifics contained within the warning. The Soothsayer's warning was undermined by all of these factors, as Caesar's hubris blinded him to his vulnerability and the existence of an opposition that meant him ill, which in turn was compounded by the generality of the warning.

One important lesson learned from *Julius Caesar* is that the repercussions of an isolated event can not only have different and unexpected outcomes, but also that its effects can be felt beyond the original confines of time and geography. Thus the repercussions of the assassination on the Ides were not limited in time and space to the Roman Senate in 44 B.C., but had ripple effects that were felt throughout the Empire for several generations. Law enforcement is currently facing similar challenges, in that what may originally be perceived as localized events or insignificant

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[3] For instance, the current French government was elected on a platform centered on the idea of confronting the growing sense of *insécurité* (insecurity) felt by the citizenry. This general feeling was not only fed by a perceived rise in the incidence of both violent and non-violent crimes, as well as of *incivilités* (incivilities such as graffiti, loitering, verbal aggression and other such activities in most public areas).

discoveries (i.e. technological developments) rarely stay that way as their impacts, both expected and unexpected, spillover into other areas.

For instance, the withering away of the Iron Curtain in 1989 was initially greeted with great enthusiasm, as it was believed that within a generation at most the East would become thoroughly westernized. Europe would finally be as one as it, and its allies enjoyed the fruits of the peace dividend. It is interesting how hubristic or insouciant many were in those early days. It was as if the East represented a blank and ahistorical canvas.

The point here is that the many in the West had a fundamental misunderstanding of the East and how it had actually functioned under Soviet communism. We seemed blissfully unaware of the way things (the economy - legitimate and not - as well as personal and political relationships) functioned in those places. A change of political regime, whether violent or not, does not immediately sweep away social norms and behaviors. This explains why many Western law enforcement agencies were taken by surprise by successive waves of Eastern criminality. Later, many were also unprepared for the criminality emanating from the war-torn Balkans. These are but a few examples of Western law enforcement's inability to look beyond the immediate and local. The lessons that should have been learned by the earlier arrival and development of groups such as the Outlaw Motorcycle Gangs, the Cosa Nostra and the Jamaican Posses – to name but a few – simply had not been.

It would thus be a mistake to conclude that the end of the Cold War ushered in the great emergence of transnational organized crime given that its modern form, as an unintended consequence of economic globalization, has been around since at least the nineteenth century. Rather, the end of the Cold War simply expanded the territories, markets and groups at play in the global underworld. It also shattered the certainties of that era, one of which was that organized and serious crime was strictly domestic phenomena that were shaped by internal forces, not international ones. We now see that Canada's underworld is in fact not sheltered from international events, but greatly influenced by them. Moreover, organized and serious criminality is no longer simply a local matter, but increasingly a geo-strategic one as well.

From *Julius Caesar* we can also extrapolate from the example that tactical/operational intelligence (i.e. knowledge that there was in fact opposition to Caesar in the Senate) has to be understood within a larger context which strategic intelligence is supposed to provide, and that strategic intelligence and warning (Beware the Ides of March!) have little power if they are not linked to observable facts. In other words, had Caesar been aware of his own vulnerability, the Soothsayer's warning may have been able to convince him to take heed. **CISC**'s primary purpose is to be able to provide the context within which its warnings would be heeded by its community.

2. Creating A SENTINEL – The CISC-CIFP Approach

When the project began in January 2004, **CISC** made a concerted effort to reach out to potential partners beyond the realm of law enforcement, given the expertise in developing warning methodologies and systems that already existed in fields such as public health institutions, the military and academe. **CISC** consulted the vast literature on surprise and warning, sought out the expertise of practitioners in Canada and abroad, and developed a working relationship with the Country Indicators for Foreign Policy [**CIFP**] at Carleton University (Ottawa, Canada). This relationship has proven fruitful and invaluable, given **CIFP**'s demonstrated expertise in developing forecasting models for conflict and state failure.

CIFP has its origins in a prototype geopolitical database developed by the Canadian Department of National Defence in 1991. The prototype project called GEOPOL covered a wide range of political, economic, social, military, and environmental indicators through the medium of a rating system. In 1997, **CIFP** was created to meet the needs of policy makers, the academic community and the private sector. The project represents an on-going effort to identify and assemble

statistical information conveying the key features of the political, economic, social and cultural environments of countries around the world. The cross-national data generated through *CIFP* is intended to have a variety of applications in government departments, NGOs, and by users in the private sector. The data set provides at-a-glance global overviews, issue-based perspectives and country performance measures. Currently, the database includes measures of domestic armed conflict, governance and political instability, militarization, religious and ethnic diversity, demographic stress, economic performance, human development, environmental stress, and international linkages.

The **CIFP** database currently includes statistical data in the above issue areas, in the form of over one hundred performance indicators for 196 countries, spanning fifteen years (1985 to 2004) for most indicators. These indicators are drawn from a variety of open sources, including the World Bank, the United Nations Development Programme, the United Nations High Commissioner for Refugees, the Stockholm International Peace Research Institute, and the Minorities at Risk and POLITY data sets from the University of Maryland.

Even though risk assessments and early warning are both valuable tools for understanding and preventing human-generated crises they are distinct yet complementary activities. Risk assessments are based on the systematic analysis of remote and intermediate structural conditions, while early warning requires near real-time assessment of events that, in a high-risk environment, are likely to accelerate or trigger the rapid escalation of conflict. The development of a template for consolidating risk assessment and early warning methodologies into an integrated system is a cornerstone of **CIFP**'s ongoing research activities. The work of **CIFP** and its partners is designed to enable policy makers and other stakeholders in potentially volatile environments to identify factors that can generate conflict while rapidly assessing policy responses to a volatile situation.

In an effort to address the need for a dynamic and comprehensive capability, **CIFP** reports are a harmonization of structural indicator analysis, global overviews, country performance measures, and issue-based perspectives on political, military, demographic, social, economic and environmental factors. **CIFP**'s methodology offers an accessible quantitative and qualitative approach to conducting early warning reporting and analysis. This methodology is included in best practice early warning methodologies.

The first phase of Project SOOTHSAYER sought to test the feasibility of the methodology. In essence we wanted to know if strategic early warning for crime was possible. Using the intelligence failure model, **CIFP** researchers focused on Russian Organized Crime's [ROC] unexpected establishment in Canada in particular, and the West in general; the purpose of which was the identification of indicators, observable at the time, that could have been used to trigger a warning. At the same time, **CISC** held its First Joint Analytical Working Group meeting, which brought together investigators, analysts and external contributors who had an expertise with ROC and/or warning. The purpose of the meeting was to gauge the community's appetite, albeit from a small and select part of it, for an early warning system, receive their feedback on strategic early warning product prototypes, discuss the development of a reporting mechanism, and identify indicators for the feasibility study.

This first phase of the project sought to establish the existence of clear linkages between a variety of different indicator clusters and the Canadian criminal context. The goal of these early stages was to establish proof-of-concept for the early warning project. It was not always necessary to establish the exact causal mechanism relating each indicator cluster impacted upon criminal activity in Canada. As a proof-of-concept exercise, the goal was to establish the principle that observable and potentially predictable linkages do exist between domestic and international indicators on the one hand, and criminal activity in Canada and abroad on the other. Accordingly, Phase I examined the criminalization of the Russian state that took place throughout the 1990's in an effort to identify changes in observable structural indicators that presaged, permitted, or actively encouraged the explosive growth of criminal activity in that country. Wherever possible

the research also attempted to identify the specific triggering events that sparked Russian criminalization, and to also identify the specific linkages that allowed ROC to spread into Western Europe, the U.S., and Canada.

The research methodology was multifaceted, drawing on both primary and secondary sources in the inductive search for observable causal linkages. Using **CIFP** indicator clusters as a starting point, researchers identified a long list of candidate indicators thought to be of criminogenic importance.[4] Each indicator cluster included a broad array of related sub-indicators. Though any one indicator might prove insufficient, an amalgam of several related indicators greatly increased the likelihood of a reliable result (See table 1 on p. 10 for a list of the indicator clusters employed over the course of the research). Once this initial indicator list was developed, it was then amended, supplemented, and refined through a survey of the extensive literature on post-communist Russia and the other successor republics.[5]

These candidate indicators were then evaluated for correlation using a method of process tracing, establishing which ones were demonstrably relevant to the generation and transmission of crime.[6] Criminal activity served as the dependent variable, measured, like all other indicator clusters, using a variety of sub-indicators. These included Russian and international police reports, prison surveys, international drug monitoring reports, hospital records, opinion polls, NGO releases, and media reports. Data was then harvested for each independent variable indicator cluster and then analysed for any correlation, either causal or otherwise, to the growth and evolution of Russian-based criminal activity. Though the establishment of clear causal mechanisms was undoubtedly most helpful, evidence of strong and predictable correlation was also considered useful.[7]

The goal was not to create a general theory of crime, or necessarily even to establish a definitive weighting scheme for the various predictive indicators, but simply to establish a "toolbox" of indicators that exhibited causal or otherwise correlative linkages to the generation and transmission of crime. Rather than definitively isolate the dominant causal mechanism(s), the study sought to identify as many different relevant indicators as possible. Given this aim, post-communist Russia proved to be an extremely valuable case study. The sheer magnitude of criminalisation throughout the 1990's, the wide variance in background conditions among the many post-communist republics, and the subsequent emergence of Russian Organized Crime (ROC) in western Europe and North America combined to provide an exceedingly rich set of observations. Ultimately, the study was able to positively identify a wide range of different indicators with strong causal linkages to crime. It also uncovered a number of "symptoms" of criminal activity; though not causes of crime these nonetheless could prove useful corroborative elements in an early warning system.[8]

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[4] For a full description of **CIFP** indicators and methodology, see **CIFP**, "**CIFP** Risk Assessment Indicator Definitions;" and **CIFP**, "**CIFP** Methodology, Data Descriptions, Data Sources," accessible online at http://www.carleton.ca/**CIFP**/descriptions.htm [accessed 22 April, 2005].

[5] The full study is available online. See Julia Novitskaia and Stewart Prest, "Criminogenic Early Warning and Indicator Survey," (Ottawa: *CIFP,* 2004), available on line at http://www.carleton.ca/CIFP/docs/russia-crim.pdf.

[6] For discussions of the general method employed, see Stephen Van Evera, *Guide to Methods for Students of Political Science,* (Ithica: Cornell University Press, 1997), 64-67; and Gary King, Robert O. Keohane, and Sidney Verba, *Designing Social Inquiry: Scientific Inference in Qualitative Research*, (Princeton N.J.: Princeton University Press, 1994), 225-228.

[7] To a certain extent, this sentiment accords with King, Verba, and Keohane's insistence that that good description is always better than poor explanation in research. See *Designing Social Inquiry* 75, fn. 1. Notwithstanding the obvious need for leading indicators in early warning, strongly predictive relationships are arguably more valuable than weak causal linkages when attempting to create and verify early warning. Some forecasting methods, such as econometric time-series analysis, abandon causality entirely and rely purely on pattern recognition. See for instance C.W.J. Granger, *Forecasting in Business and Economics,* (New York: Academic Press, 1980).

[8] For the full discussion, see Novitskaia and Prest, "Criminogenic Early Warning."

The feasibility study proved successful, and it was determined that the embryonic methodology developed for it should be used on three present-day issues, each representing a different level of analysis: international event; commodity; group. These pilot studies, or phase II of Project SOOTHSAYER, were to help test the applicability of the methodology, and further the development the strategic early warning product, known as *SENTINEL*. The subjects tackled included: the impact of Haitian political strife on Haitian-Canadian street gangs; the future of the BANDIDOS Outlaw Motorcycle Gang; and the future of methamphetamine production and distribution in Canada.

Strictly speaking, **CISC** could be criticized for having chosen topics that were already present in Canada. But because **CISC** wanted early buy-in from the community, it needed subjects that were already salient, and whose potential impacts would be felt in no more than 24 months. **CISC** has thus adopted an incremental approach to fully developing its early warning capabilities. Eventually, subjects will truly be over-the-horizon and have much longer time-lines.

The research and writing for two of the *SENTINELS* was completed by **CIFP** researchers. They conducted open source research and based their judgments on the information they had available to them at the time. Closed sources were also used by **CISC**, but not directly included in the assessments. Instead they were used to confirm or disconfirm conclusions based on open source information. Our use of open sources was mainly due to our desire that the *SENTINELS* reach as wide an audience as possible beyond the traditional confines of the Canadian law enforcement community to include academic institutions, think tanks, government departments, and foreign law enforcement and intelligence partners. Moreover, the use of open sources is increasingly recognized as an essential research and analytical tool by the intelligence community as a whole. In fact strategic warning intelligence cannot be done without the big picture input of open sources.

The three pilot studies were published and distributed in the fall of 2004. Although only pilot studies seeking to gauge the appetite for such assessments within the **CISC** community and their utility to the very same community, they nevertheless demonstrated that strategic early warning could be done in the field of law enforcement and that it could be done in a clear and concise manner.

Research conducted during phase II sought to further refine this growing toolbox, testing the various indicator clusters against several contemporary situations with known or suspected criminological implications for Canada. This phase also attempted to make more explicit the relevance of observed or anticipated criminal activity to the Canadian context. One study, following the country-based model of the Russian effort, evaluated the potential for the continuing upheaval in Haiti to influence criminal activity in Canada.[9] A second study attempted a different type of analysis, examining the spread of methamphetamine use in Canada particularly as a side-effect of any expanding influence of Hispanic Organized Crime (HOC) groups in the country. Though this latter effort began as a comparative case study examining the methamphetamine situation in the U.S. for emerging parallels to Canada, it quickly became apparent that the Canadian context presented a number of characteristics that did not correspond to the situation in the U.S. As a result, the study adopted a number of novel analytical techniques that combined to produce a uniquely Canadian analysis of the problem.[10]

By the end of phase II, the project had made significant inroads towards all three of its goals. It had produced an initial research methodology for early warning, and developed a working template and dissemination method for the actual early warning reports, now referred to as

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[9] Stewart Prest, "Upheaval in Haiti: The Criminal Threat to Canada," *CIFP*, November 2004. Available online at http://www.carleton.ca/cifp/risk.htm.
[10] Bruno Nordeste, "The Potential Expansion of Methamphetamine Production and Distribution in Canada," *CIFP*, November 2004. Available online at http://www.carleton.ca/cifp/risk.htm.

*SENTINEL*s. Template development proved to be a labour-intensive task, involving a number of iterations and a great deal of feedback from potential users and other stakeholders. The chief difficulty lay in creating a vehicle that could communicate the results of a large body of research and analysis in a very streamlined format, in a way that a broad spectrum of the **CISC** community – from personnel on active duty, to criminal intelligence analysts, to senior policymakers – would find useful. The following sections present these results, describing the research methodology and *SENTINEL* template in more detail.

3. Assessing Risk – The SENTINEL Methodology

Though early warning is the final goal of the *SENTINEL* project, that warning is only useful if grounded in a sound process of risk assessment. Assessing risk is a fundamental part of many aspects of public policy; thus current efforts to generate criminological early warning can draw on an established literature on the subject.[11] A brief survey of such literature reveals that risk assessment is never a purely scientific endeavour.[12] Even in areas of public policy that have recourse to clinical trials and other forms of experimentation, such as food and drug regulation, objective scientific evidence inevitably leaves room for interpretation and judgement. Ambiguity arises as one attempts to assign relative importance to various indicators, predict the relative probability of a given threat, and assess its possible impact.

Such ambiguities become particularly relevant as policy-makers debate whether to focus all energies on preventing the worst possible outcome, however unlikely, or to expend the majority of resources working to alleviate less catastrophic threats that are almost certain to materialize. While undoubtedly it is the task of government to anticipate and prepare for the worst, there are real trade-offs to consider as comparatively more resources are dedicated to efforts to protect against catastrophe as opposed to more mundane, yet more likely threats. One of the real values of risk assessment to policymakers is that it makes some of those tradeoffs more explicit. The *SENTINEL* methodology attempts to do this in several ways. First, it disaggregates its assessment of the relative probability of a given threat from its potential impact, giving the reader a clearer sense of the type of warning being issued.[13] Secondly, when probability and impact potential are reintegrated into the final Threat Advisory Level, they are accompanied by a short verbal summary that provides some context for the warning, highlighting the reasoning underlying it. Regardless of whether the warning is issued against a comparatively unlikely though potentially catastrophic turn of events, a relatively likely phenomenon localised to a particular region, or some other permutation of the threat, the *SENTINEL* methodology seeks to make the warning as transparent and specific as possible.

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[11] For example, the May 1996 issue of *The Annals of the American Academy of Political and Social Science* is dedicated to the subject of uncertainty and risk assessment in public policy.
[12] For a discussion of the factors complicating any attempt at completely objective risk assessment, see Dale Jamieson, "Uncertainty and Risk Assessment: Scientific Uncertainty and the Political Process," *The Annals of the American Academy of Political and Social Science,* May 1996, 36-43.
[13] John D. Graham and Lorenz Rhomberg, "Uncertainty and Risk Assessment: How Risks are Identified and Assessed," *The Annals of the American Academy of Political and Social Science,* May 1996, 22-23.

CISC Threat Advisory Level:	MEDIUM

a) Probability level

MEDIUM	The growth of a formalized and structured nexus must be considered probable rather than possible at this point. With no significant structural barriers present, the potential for the growth of such links is real.

b) Impact potential

MEDIUM	The emergence of a Haiti-Canada criminal nexus would have strong implications on criminal activity in the greater metropolitan area of Montreal. The effects may spill-over into other urban centres in Central Canada, including Toronto and Ottawa-Gatineau.

Figure 1 -- Example Threat Advisory from the Nov. 2004 Haiti SENTINEL.

Third, the *SENTINEL* also includes an extrapolative scenario analysis in an effort to isolate the dominant positive and negative trends in the situation under analysis. These are intended to provide readers with a more nuanced understanding of the potential risk, putting "flesh on the bones" of the raw indicators and threat advisory. The worst-case scenario provides further insight into the impact potential of the threat, while the "most-likely" case provides some indication of whether the worst-case, or something similar, is sufficiently likely to warrant serious attention.[14]

The background research and analysis consists of three stages. The first consists of identifying, collecting, and analysing data on perceived threat – the event, group, or activity motivating the research. The second stage then studies the Canadian context in search of points of entry, intersection, or vulnerability with respect to the identified threat. The third and final stage combines the insights of the first two stages to generate a comprehensive risk assessment. There is no single template identifying the necessary and sufficient elements of such an analysis. A given research cycle may be deemed complete only when it can satisfactorily answer the motivating research question and assess the level of threat.

One can, however, identify three broad levels of analysis likely to be included in a given *SENTINEL:* country-based, group-based, and activity-based. The type of threat under consideration determines the level of analysis; each employs a distinct methodology. Of course, the three levels are ideal types of analysis; a thorough study of any threat and its potential impact on Canada may in fact incorporate indicators from all three levels of analysis. In the case of Haïtian *SENTINEL*, for example, the final analysis included one set of country-based indicators describing the state of affairs in Haïti, a second set of group-based indicators to detail specific criminal organizations within Canada, and a third set of activity-based indicators to describe cocaine trafficking in the Caribbean. The final analysis thus utilized all three analytical levels. Table 1 lists common indicator clusters associated with each analytical level; note that the lists are intended to be illustrative and not exhaustive.

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[14] For a discussion of the broad functionality of scenarios in bridging the gap between early warning and strategy implementation in a business context, see Alexander Fink, Andreas Siebe, and Jens-Peter Kuhle, see "How scenarios support strategic early warning processes," *Foresight* 6, no. 3 (2004) 173-185.

Table 1 – Typical Indicator Clusters		
Country-Based analysis	Group-Based analysis	Activity-Based analysis
- Conflict History - Governance - Economics - Demographics - Society - Environment - Human Development - International Involvement - Criminal History - Criminal Trends	- Group History - Organisation - Core activities - Key members - Alliances - Proclivity for violence - Community base and demographics - Position in Underworld / Balance of Power - Potential for growth nationally and internationally	- Market dynamics - Competition - Monopoly / monopsony - Complementary / substitution effects - Supply chain dynamics - Suppliers - Distribution - Marketing techniques - Demand demographics - Victims - Social impacts

Throughout this first stage of analysis – the analysis of threat – the implicit question, "What is the significance of each threat indicator to crime in Canada?" remains on the periphery. Ultimately, data are relevant to the analysis only to the extent that they are relevant to Canada, though given the interconnected nature of the global economy, the concept of "relevance" must be interpreted broadly. The second stage of analysis focuses on the issue of Canadian relevance explicitly. It examines Canada – its political, social, economic, environmental, and geographical landscape, its current local and international context, its criminal history and its emergent criminal trends – for likely points of entry, intersection, and/or vulnerability between the external development on the one hand, and Canada and its population on the other. In essence, this second stage of analysis consists of a focused SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) of the Canadian "universe," identifying vulnerabilities in the country, its people, its government, and international interests with respect to the external development.

In the final stage of analysis, the perceived threat is re-examined in light of the SWOT analysis to determine both the probability that it will impact upon criminality in Canada, and the magnitude of any such impact(s). The various indicators from the first two stages are weighted and synthesized to form as complete, balanced, and accurate a picture as possible. This final synthesis identifies any secular trends in the situation that are either beginning to emerge or already extant; it also attempts to extrapolate possible future developments. Ideally, the analysis will give some indication of the probability and impact of each trend identified. Once complete, this open source research is then verified and, if necessary, supplemented with relevant classified data. The conclusions are then summarized to form the final *SENTINEL* brief.

SENTINEL – Constituent Elements

Each *SENTINEL* contains the same basic elements:

Warning Notification: This short verbal summary of the report's most important conclusions appears on the front cover, along with the overall Threat Advisory Level. In two or three sentences, the Warning Notification indicates 1) the probability that the external development will have an effect on the Canadian context, and 2) the potential impact of that development. It identifies any anticipated changes in the Canadian criminal marketplace, as well as the particular regions most likely to be effected. Given the number of divergent demands placed upon decision-makers, investigators, and analysts, the colour-coded Threat Advisory Level is provided as a tool to aid in assigning priority and allocating limited resources, providing readers some idea of the relative magnitude of the problem, combining considerations of probability, potential impact, and anticipated timeline.

Warning Definition: This heading identifies the potential threat under consideration. It captures the research question motivating the entire report.

CISC Community Interests: This section describes the relevance of the problem under analysis, both to Canadian society in general and to law enforcement agencies in particular. It provides answers to readers' "so what" questions.

Analysis: This section synthesises the various elements most relevant to the problem. It collates and prioritises the various indicator clusters used to analyse the external development and evaluates their potential impact on Canada. Drawing upon the scenarios presented later in the *SENTINEL*, the Analysis section identifies the trends most likely to drive events in the short to medium term, and provides some conclusions regarding likely developments in the next 24 months.

Warning Indicator Summary: This summary presents and summarises the indicator clusters most relevant to the preceding analysis. It is divided into "primary" and "secondary" indicators. The secondary indicators focus on the structural and sectoral factors that are considered to be permissive causes of the perceived threat; they provide insight into the more strategic, "big picture" developments. Primary indicators describe individual and group level "triggers" and "accelerants," identifying more proximate causes of observed or anticipated changes in Canada's criminal environment; these provide operational and tactical types of intelligence.[15] Each indicator includes a brief verbal commentary, as well as a colour-coded "information status" – low, medium, high, or very high – based upon the extent of evidence available to the analyst(s) at the time of the assessment.

VERY HIGH	Evidence strongly and unambiguously supports finding that condition is present.
HIGH	High degree of corroborated evidence suggesting that condition is present.
MEDIUM	Moderate degree of evidence suggesting presence of condition, some of which is substantiated.
LOW	Evidence of condition is scant and/or inconsistent.
NIL	No evidence to support presence of condition.

Figure 2 - Warning Indicator Coding Key

Threat Advisory Level: This section provides the actual *SENTINEL* warning. Based upon the preceding analysis, the Threat Advisory Level presents a colour-coded ranking of the problem. It is presented in three parts: the **probability** that the external development will affect Canadian society; the **potential impact** of that effect; and the overall **level of threat** the problem presents to the Canadian law enforcement community.[16] Each of these three elements receives a coded ranking, as well as a verbal assessment of the key conclusions driving the warning. The level of probability depends on the likelihood of impact in the next 6 to 24 months. The impact potential is ranked according to both the scope of the problem – local, regional, or national – and the anticipated implications on the Canadian criminal marketplace. Finally, the overall Threat Advisory Level presents a synthesis of both elements. Figures 3 and 4 provide the coding keys for probability and potential impact, respectively.

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[15] For the definition and use of these terms in the context of early warning, see Barbara Harff, "Early Warning of Humanitarian Crises: Sequential Models and the Role of Accelerators," in John L. Davies and Ted Robert Gurr, (eds.), *Preventive Measures: Building Risk Assessment and Crisis Early Warning Systems,* (New York: Rowman & Littlefield, 1998) 70-78; Barbara Harff and Ted Robert Gurr, "Systematic Early Warning of Humanitarian Emergencies," *Journal of Peace Research*, 35, no. 5 (September 1998) 551-580; and FEWER, *A Manual for Early Warning and Early Response*; 1998. A more recent discussion is available in David Carment, "Assessing State Failure: Implications for theory and policy," *Third World Quarterly,* 24, no. 3 (2003) 407-427.

[16] Graham and Rhomberg, "How Risks are Identified," 21-24.

CERTAIN	Event occurring; situation now requires response rather than prevention.
HIGH	High probability of event occurrence in the next 6 to 24 months; developments are imminent. Preventive action still possible though must be increasingly vigorous in order to have mitigating effect.
MEDIUM	Moderate probability of event occurrence.
LOW	Low probability of event occurrence. Likelihood of event occurring below 50%.
NIL	Probability of occurrence is negligible. No warning necessary.

Figure 3 – Probability Coding Key

VERY HIGH	Severe implications for the organized crime situation in Canada. Major impact will be felt across provincial and national borders.
HIGH	Significant impact on organized criminal activity in Canada in multiple regions.
MEDIUM	Moderate impact on organized criminal activity in Canada. Impact will be primarily in a single region, but effects there may be significant.
LOW	Minor or highly localized impact on organized criminal activity in Canada.
NIL	Negligible impact on organized criminal activity in Canada. No warning necessary.

Figure 4 - Impact Potential Coding Key

Scenarios: Using the information collected and analysed for the *SENTINEL*, this section describes three alternative scenarios for the problem: a "best-case," a "worst-case," and the "most likely" scenario.[17] The best-case highlights the most important positive trends extant in the data and extrapolates their likely impact on the situation, controlling for more negative indicators. The worst-case reverses that process, identifying the dominant negative trends among the indicator clusters and determining their impact on Canada if unmitigated by moderating influences. Finally, the most-likely scenario attempts to isolate the dominant trends emerging from the entire analysis, presenting developments considered most likely over the medium term. Importantly, it is not simply an average of the best and worst cases; rather it is a measured attempt to identify the most likely chain of events over the next 24 months given current information. The scenarios may also highlight the most important points of leverage in a given situation, the vital fulcra that may dictate the eventual outcome. They give readers an indication of what to expect in the short to medium term and provide them with some guidance as to how to both avoid the worst-case and work towards the best-case.

Judgements and Implications

This final section draws together the conclusions of the previous sections, providing the reader with an understanding of the overall picture. It extends the analysis of the most likely scenario, giving the reader a deeper understanding of the nature of the threat, its probability, and its potential impact. This section also presents falsifiable hypotheses that will allow future evaluation of the *SENTINEL*'s core thesis. In many cases, these hypotheses must be verified or falsified through further open source research, or using classified sources. If the information necessary to test the hypothesis is not currently available, the *SENTINEL* should also include a research agenda that will allow eventual validation of the warning.[18]

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[17] Troy Joseph provides an account of the role of scenarios in CIFP risk assessment and early warning. See "Early Warning Methods: Background Report and Methodological Notes," (Ottawa: *CIFP,* 2000). Available online at http://www.carleton.ca/cifp/docs/EW_Hotspots.pdf. (Accessed 22 April, 2005).
[18] In its purest form, the *SENTINEL* is simply presenting a hypothesis; thus normal procedures governing hypothesis formation and testing in social science clearly apply. See for instance Van Evera, *Guide to*

Some evidence will also come as analysts compare the Canadian context to the experiences of other relevant countries, not only to isolate likely trends and vulnerabilities, but also to identify possible allies and strategies that may aid Canadian enforcement agencies eventually assigned to wrestle with the problem. Thus, such comparisons should not only involve nations similar to Canada such as Australia, New Zealand, the U.K., the U.S., and other OECD countries, but also nations often considered quite dissimilar to Canada. Effective analysis must combine deductive considerations (what *should be* likely effects) with empirical evidence (what *have been* commonly observed effects in other jurisdictions) in a package that is useful to readers. Ultimately, this section should serve to provide policy makers with some idea of the implications of a decision to devote resources to address the problem, or not.

Limitations, Weaknesses, and Caveats

Given the ambitiousness of the endeavour, and the relative infancy of the project, we are fully aware of its weaknesses and limitations. To date, one of the major weaknesses of the project has been the absence of a structured reporting mechanism linking the entire community, so that warnings can be issued and disseminated from the provinces. This mechanism also remains the most daunting aspect for the full implementation of project SOOTHSAYER. It will take several years before it is fully operational, and before it becomes an intrinsic part of criminal intelligence analysis in Canada. It is also evident that some of our warnings will be for naught – that is the inherent weakness of warning – and we are educating our community that this will be the case. The choice of the first three SENTINELS should also be seen in the light of wanting to mitigate this weakness.

Also, limitations on time and data constrained our choice of methodology. For instance, it was simply not possible to develop and deploy a sophisticated econometric model. Instead, the project relies on structured expert-based analysis, referred to as a "structured judgment" method by Dipak Gupta.[19] It is in some ways a hybrid, combining a formal research and assessment methodology with expert insight and assessment. It is unlikely that **CISC** will be able to rely on econometric methods in the near future, given the lack of coded and raw data, and the inability of most in the community to earmark the significant time and resources that would be required. This may pose a problem because without a formal econometric model, there is an increased risk that causal patterns will remain buried in the data. There is also reduced uniformity in the analyses, with results being only as good as the analyst. In particular, there are the very real danger of tunnel vision and "group think," as analysts find only what they expect to find or, worse, what their superiors expect them to find. There is no foolproof method to guard against such hazards; one must simply remain vigilant and make the analysis as transparent and explicit as possible, thus enabling debate and, when necessary, critique.

Expert-led analysis also has its advantages. Its analysis tends to be both more flexible and cost effective than more formal methods of assessment. The best human analysts are more omnivorous than most formal models, able to absorb many different types of data into their analysis without significant disruption. Given the extreme variety of data sources under analysis for any given *SENTINEL*, this is a distinct advantage. In addition, allowing analysts the freedom to follow their intuition increases the likelihood of an independent and original analytical result. By definition, early warning requires researchers to uncover previously unknown patterns and identify potential problems that have thus far escaped conventional analysis – to see "over the

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Method, 31-40; much of King, and Keohane, and Verba, *Designing Social Inquiry*, also applies, especially 99-114.

[19] Dipak Gupta, "An Early Warning about Political Forecasts: Oracle to Academics," in Susanne Schmeidl and Howard Adelman (eds.) *Early Warning and Early Response,* (New York: Columbia University Press-Columbia International Affairs Online, 1998), ch. 10.

horizon." Given such goals, freedom to develop original ideas becomes not only a methodological advantage, but a necessary prerequisite of strategic intelligence and true early warning.[20]

Second, the *SENTINEL* is an attempt at early warning, and not forecasting. The distinction is significant. As Gupta points out in the context of early warning in situations of conflict, the goal of early warning is not to correctly predict the future.[21] Ideally, the warning triggers responses that mitigate or completely reverse the perceived threat. In such cases, the very success of the warning spoils the forecast; this certainly does not render the effort a failure, however. Such considerations do point to a persistent problem however, in that the endogeneity of predicted and actual outcomes renders direct evaluation of early warning systems extremely difficult. If the early warning results in a 100% avoidance rate, direct evaluation of forecasting accuracy would indicate a 100% false positive rate as well, potentially undermining support for the entire project.[22] Other potential direct methods of evaluation – for example, comparing total crime rates before and after the implementation of the early warning – are clearly even more problematic. The project must therefore be evaluated indirectly; possibilities include assessing its perceived utility to policymakers and other users. Early phases involved extensive consultations as a result, and such efforts will continue during future phases of the project.

Finally, it is important to underline the fact that the role of criminal intelligence is not prosecutorial. In other words, criminal intelligence is not in the business of building cases and evidence against individuals or groups. Rather, it is there to offer a better understanding of the criminal marketplace, to allow target selection based on evidence, and to enable the efficient allocation of law enforcement resources.

4. Creating a Watch List

Within SEWS, the *SENTINEL* is the primary vehicle for in-depth analysis and assessment of perceived threats. However, to produce true *early* warning, there must also be a method through which the myriad potential threats and emerging issues are identified and prioritized. One can only produce a finite number of detailed risk assessments; thus effective warning requires an efficient scanning process to uncover, monitor, and prioritize potential threats. The *SENTINEL Watch List* was developed by **CIFP** researchers in consultation with **CISC** to serve this purpose. Like the *SENTINEL* itself, the *Watch List* is primarily an open-source exercise, designed to reach beyond the normal information flows of the law enforcement community to draw out the widest possible range of topics. In addition to topics identified by in-house experts, the *SENTINEL Watch List* also harnesses public news sources and research to uncover and flag nascent trends not yet identified by enforcement personnel.

The *Watch List* is based on as broad a spectrum of potential threats and issues as possible. For example, computer-oriented crimes and maritime piracy both came up in the initial scan as possible topics – the first mostly on the basis of open source material from the United States, while the second emerged from information gathered through open sources in South-East Asia. Some computer crimes were chosen for further follow-up while piracy was not, but the *Watch List* is the primary opportunity for exploring such far-ranging possibilities.

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[20] Martin Petersen, "Advice from a DI Careerist: The Challenge for the Political Analyst," *Studies in Intelligence,* 47, no. 1, 2003; Sir Percy Cradock, *Know Your Enemy: How the Joint Intelligence Committee Saw the World,* (London: John Murray, 2002). Cradock's excellent book reveals several of his central insights from his time as chair of the U.K.'s Joint Intelligence Committee, including the indispensability of human analysis to any successful intelligence effort. Efficient data collection and processing can never compensate for faulty end analysis; similarly, no amount of tactical and operational information can overcome a gap in strategic intelligence.
[21] Gupta, *"*Early Warning about Political Forecasts."
[22] Gupta, "Early Warning about Political Forecasts"; Ted Robert Gurr and Barbara Harff, *Early Warning of Communal Conflicts and Genocide: Linking Empirical Research to International Responses,* (Tokyo: United Nations University, 1996) 9.

The *SENTINEL Watch List* is developed and updated through a three step analysis of open-source information. The first step involves a *Meta-analysis* of news, public police reports and research studies. Regular scans of key domestic and international news and law enforcement sites are used to flag issues and discern key identifiers (search strings and keywords that describe the issue). These identifiers are then fed into online alert systems to track emerging developments. In depth searches on these topics are then carried out through databases, web search engines, police press releases, news archives, and publications from research institutes (e.g. epidemiological and criminological studies). The goal is to identify the geographic scope of a problem, its history and impact, vulnerabilities that are being exploited, and possible trends. Topics identified by experts within Canadian law enforcement and criminal intelligence agencies are also explored through the same open-source meta-analysis.

The second step is the initial selection of topics for further monitoring. The topics identified in step one are evaluated on their capacity to exploit vulnerabilities and undermine Canadian social and economic life. Three criteria are used to evaluate and develop a list of approximately ten topics for further monitoring:

1) **Are trends occurring elsewhere that exploit weaknesses similar to those present in Canada – economic, social, technological or legal conditions that provide an opportunity for organized crime?**
2) **What is the rate of growth and impact of these trends?**
3) **Are there possible links between those trends elsewhere and criminal activity in Canada?**

Monitoring is only a process of selection for future potential in-depth study. There is therefore no or very little analysis done by the researchers. Rather they rely on meta-analysis of research summaries completed by others.

The final and third step in the *SENTINEL Watch List* process is the prioritization of selected topics. Issues identified in step two are prioritized based on two criteria:

1) **Is the criminal activity in question already emerging in Canada, and does it have the potential to grow; and**
2) **What is the estimated timeline for impact (1yr, 5yrs, 10yrs, etc.)? This second question is answered through an analysis of trends elsewhere, the growth of the targeted industry or technology, the projection of trends already present, and the approximate time needed for implementation of legal and enforcement counter-measures.**

Issues that are identified through the application of the above criteria as priority issues are labeled "Issues of Concern", and then become the primary candidates for future in-depth *SENTINELS*.

Updating the *SENTINEL Watch List* is a continuing process that can be done on an "as needed" basis or in a focused manner at regular intervals. The process faces some intrinsic limitations. First, the working languages of the researchers affect access to information. Language restrictions may skew the process in favour of certain issues. Second, there is an imbalance in online news and information presence among countries as online resources originate from a limited number of regions and states. Third, the lack of consistency in statistical methods across jurisdictions is troublesome, especially in the distinction and categorization of different crimes, weapons, drugs, and industries. This limits the ability of the researcher to recognize trends across borders. Finally, open-source information available on the wide range of topics scanned is also narrow, incomplete and at times hard to access. This may result in a distorted picture of trends and over or under inflate an issue's importance. To mitigate these factors, conclusions on priority and timeline should be verified and, when necessary, supplemented using classified data and

specialized open sources such as FBIS. It is also important to note, however, that the goal of the *Watch List* is to identify issues for further research, not provide definitive answers on its own.

5. Conclusion and Directions for Future Research

In summary, each *SENTINEL* is the result of an extensive research cycle that collects and analyses a broad array of information and then extrapolates likely trends and developments on the basis of that analysis. The initial research phase consists of two tracks, one done using open source material, and the other using classified sources. The open source research examines economic, social, political, and environmental factors, while the classified research may include information from **CISC**, the RCMP, other police forces, DND, FAC, CBSA, CIDA, PCO, FINTRAC, Transport Canada, other governmental sources, international police organisations such as INTERPOL, other governments, international organizations, as well as key members of the corporate sector.

Once complete, the two research tracks are combined to produce the final *SENTINEL* product. The combination of open-source and classified research allows analysts to consider not only permissive structural and sectoral level indicators, but also information at the individual or small group level, the latter gleaned when necessary through classified sources. The net result is a multilayered analysis that captures broad secular trends as well as the specific accelerants, bottlenecks, and triggers with the potential to drive events. In military terms, it combines the strategic with the operational and tactical, striving for a total view of the emerging situation and its likely evolution.

The end goal of the open source research track is a comprehensive background research document that summarises and analyses all available data relevant to the *SENTINEL* topic. It brings together a broad assortment of information far beyond purely criminological topics and sources. First, it collects data relating to a series of key indicator clusters likely to provide insights into some emerging development either within Canada or in the international community. It then examines the current criminological situation in Canada, again using clusters of key indicators to structure the analysis. Finally, it assesses the various ways in which the external development might impact upon criminal activity in Canada. Like the **CIFP** project on which it is based, the report does not rely upon a single deductive framework in its analysis, but instead gathers data from many sources, then analyses it using a number of different perspectives.

The first official *SENTINEL* was released in March 2005. This *SENTINEL* not only sharpened the methodological tools developed so far for strategic early warning, but also clearly demonstrated that **CISC**'s Central Bureau can and must marshal the strengths of its community partners, such as **CIFP**, in order to fulfill this mission.

CISC Central Bureau is now in the fourth phase of its project. The fourth phase of this project centers on the production of a paper on the methodology developed for Project SOOTHSAYER, as well as the creation of the *SENTINEL WATCHLIST*. This watchlist will allow Central Bureau to track a number of potentially important issues and events that could have an impact on the organized and serious crime situation in Canada. Also, by establishing criteria by which threats are upgraded or downgraded, this watchlist will help guarantee that *SENTINELS* will be issued when warranted, rather than when mandated. Solidifying the criteria by which *SENTINEL* subjects are chosen is critical to the long term success of this project. Although the subjects of previous *SENTINELS* were worthy of exploration, in future we must avoid politicizing case selection; to not do so would ultimately undermine the credibility of the assessments and the project in general.