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SWOT ANALYSIS OF DATA COLLECTION METHODS

INTRODUCTION

1. This document provides a matrix of data collection methods that can be used to support the measurement of attitudinal and behavioural effects in military operations. The matrix was developed at the second meeting of the North Atlantic Treaty Organisation (NATO) Research Technology Agency (RTA), Human Factors and Medicine Panel (HFM), Technical Group (TG) 160 on 'Measurement of Effectiveness (MOE) of Psychological Operations (PSYOPS) as a part of Information Operations (IO)' in San Diego, CA, USA in January 2008. The matrix includes an analysis of the strengths, weaknesses, opportunities and threats of each data collection method against a range of situational variables.

AIM

2. This matrix is intended to support PSYOPS Officers and deployed Operational Analysts with the planning and design of data collection activities to enable the Measurement of Effectiveness of influence activities. It is anticipated that this will be incorporated into the final deliverable of the HFM 160 RTG as part of its guidance on MoEs for Information Operations.

DATA COLLECTION METHODS

3. The Task Group identified the key methods for collecting data to assess the measurement of effects, based on their expertise in the conduct of social science research, and with a particular focus on the military operational environment. The collection methods and their definitions are given below:

- a. **Face-to Face Encounters**: A planned or impromptu, recurring or infrequent interpersonal encounter in the presence of the subject(s) of interest.
- b. **Interview (individual)**: Interviews involve subjective or objective questions (either with or without pre-determined answer options), the aim of which is to gain insight into specific opinions, behaviours and perspectives. Interviews are typically held in the form of a formal face-to-face or telephone conversation between interviewer and interviewee. The formality of interviews is what distinguishes them from face-to-face encounters, which have a more informal and spontaneous character.
 - i. **Structured/Directive Interview**: Fixed format interview in which all questions are prepared in advance and are presented in the same order to each interviewee. Although this style lacks the free flow of a friendly conversation (as in an unstructured Interview) it provides the precision and reliability required in certain situations.
 - ii. **Unstructured/Non-Directive Interview**: Interview without any set format but in which the interviewer may have some key questions formulated in advance. That the interview is unstructured does not imply that it is without a pre-determined goal; there is usually a specific topic to be addressed or in which insight is desired. Unstructured interviews allow questions based on the interviewee's responses and proceed like a friendly, non-threatening conversation. However, because each interviewee is asked a different series of questions, this style lacks the reliability and precision of a structured interview. In a military context, unstructured interviews may include debriefings with prisoners of war (PoWs).
- c. **Focus Group**: A sample group representative of the population of interest (target audience) gathered together for the purpose of obtaining perceptions and/or opinions, suggesting ideas, or recommending courses of actions. The responses

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and discussions are studied to determine the opinions, behaviours or perceptions that can be expected from a larger population. While research indicates that 8-10 people is an ideal number for a productive focus group, the size of the group will have to be determined based on factors of the specific situation.

- d. **Questionnaires:** These include questionnaires, surveys or polls. They can be distributed (e.g. handed out, air-dropped, posted) or made freely available (e.g. posted on the internet) for completion by the subject population.
- e. **Tallies:** Record keeping or counting of events, things, or people indicative of a direct or indirect effect. Certain indicators could be counted using electronic collection methods, such as through SIGINT (e.g. monitoring telephone call volumes).
- f. **Participant Observation:** A qualitative research technique where the investigator actively participates in or is immersed in the environment of the particular culture of interest.
- g. **Request for Information (RFI):** A research and information gathering tool and process aimed at collecting the most current intelligence from multiple open/closed sources in a timely manner.
- h. **Media Monitoring:** The organised collection, collation, and filtering of material in the media: e.g. TV, press, internet, radio, video/DVD.
- i. **Literature Review:** An extensive search of the credible, relevant, published information relating to a specific topic of study from both open and closed sources.
- j. **Subject Matter Expert Consultation:** A Subject Matter Expert (SME) is a person whose professional opinion is considered authoritative in a particular subject area. Their recent experience and knowledge of the job designates him/her as a technical expert. Consultation with SME can be structured (e.g. tools, techniques, and setting) or in the form of unstructured communication (e.g., face-to-face, e-mail, telephone, etc).

SITUATIONAL VARIABLES

4. The Task Group also identified a range of situational variables, against which the data collection methods were evaluated. These are:

- a. **The availability of information.** This includes the permissiveness of the environment (e.g., benign or hostile) and whether access to the Target Audience(s) is direct or remote.
- b. **The nature of the Target Audience(s).** This includes characteristics such as religion, culture, language, gender roles, and literacy. It also includes whether they are hostile, supportive, or uncommitted towards Friendly Forces.
- c. **The level of resources.** This includes the number and skills of Friendly Forces and the level of funding.
- d. **The nature of the desired effect.** This includes whether the effect is a change in attitudes or behaviours, whether it is observable or unobservable, whether it would be conscious or unconscious, and whether it is a change by a group or an individual.
- e. **The information requirements.** This includes the level of granularity required in the data, the level of certainty whether an effect has been achieved and the reliability of the measure for the decision-maker, the timeliness and dynamism of data collection, and whether the information is required to support quantitative or qualitative analysis.

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- f. The data collector variables. This includes whether the collector is military or civilian, whether they are Friendly Forces or members of the indigenous population, and characteristics such as their gender, race and religion.

SWOT ANALYSIS

5. Each data collection method was assessed using a SWOT analysis to evaluate their utility and applicability in relation to each of the situational variables. In this particular exercise, the SWOT analysis was utilised in the following way:

- a. SWOT Analysis. A strategy development tool typically used to identify and assess an organization's inherent (internal) strengths and weaknesses, as well as external (possible) opportunities and threats. In this study the SWOT analysis is used to evaluate the positive and negative aspects of specific Data Collection Techniques suitable for a psychological operations (PSYOPS) campaign.
- b. Strengths. Inherent attributes of the data collection method which are positive (e.g., useful) in relation to the situational variables.
- c. Weaknesses. Inherent attributes of the data collection method which are negative (e.g., inappropriate) in relation to the situational variables.
- d. Opportunities. Additional benefits of using the method external to the actual collection of the data itself.
- e. Threats. Potential negative outcomes of using the method, external to the actual collection of the data itself.

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METHOD	STRENGTHS	WEAKNESSES	OPPORTUNITIES	MILITARY OPERATIONAL ISSUES	
				THREATS	
	<ul style="list-style-type: none"> Encounters can be impromptu or planned Can be accomplished by anyone (not just PSYOPS team) at anytime A lot of information can be gathered in a timely manner Collector is more familiar with neighbourhood and locals Collectors gather very recent data Good for both non-verbal/verbal information <p>Face-to-Face Encounters</p>	<ul style="list-style-type: none"> Collector bias Limited sample size Unstructured data No opportunity to cross-check data; possibility is slim to develop trend analysis Difficult, personality dependent Responses are event-driven and dependent on current environmental context Difficult in non-permissive environments 	<ul style="list-style-type: none"> Develop a social network of locals Timeliness Good information for future missions Information collected can be used to assess the current opinion of population Possibly gaining a narrow view or opinion of the local population (depending on who is willing to interact with the task force and who is not) Task force members can hear unofficial “grapevine” information relevant to the mood of the Target Audience 	<ul style="list-style-type: none"> Response may be dependent on appearance If there is a bond with locals, possible for interviewer to develop too much empathy Locals can be untruthful or maliciously and intentionally withhold “grapevine” information It may be difficult to recruit professional interpreters and translators in operational circumstances Electronic devices could be used to conduct basic translations 	

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METHOD	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS	MILITARY ISSUES
	<ul style="list-style-type: none"> • Depth of information/resolution • Control over the information you're getting • Can support quantitative analysis • Good for both verbal and non-verbal information • Method lends itself to scientific rigour more so than unstructured (due to repetitiveness) • Good to test both collective vs. individual effects • Access to subconscious effects • Access to both behavioural and attitudinal effects <p>Structured Interviews (Focused or Directive)</p>	<ul style="list-style-type: none"> • Difficult in non-permissive environments • Timeliness • Can be biased by both the interviewer and interviewee (input vs. output) • Costly in terms of financial and personnel resources • Does not allow large samples 	<ul style="list-style-type: none"> • Can be contracted out (which has the potential to mitigate interviewee bias) • Can support trend analysis (can determine causality beyond correlation) • Choice of collectors • Potential influence opportunities • Ability to record and analyse carefully 	<ul style="list-style-type: none"> • Resource limitations • Loss of flexibility • Audience issues • Freedom of expression (interviewer/interviewee) • Freedom of movement (interviewer/interviewee) • People may not want to participate because they are not allowed to have contact with task force 	<ul style="list-style-type: none"> • Security situation is a big driver; access for civilian interviewers can be very difficult • Need to understand the value of 'group dynamics' before choosing between an individual or group collection forum • Interviews can be used as a precursor or catalyst to get individuals to agree to participate in a focus group • The characteristics of interpreters can be very important in getting subjects to co-operate: e.g. gender, ethnicity, tribal group. • There is a difference between interpreters and translators – may need one of each to provide different things • It may be difficult to recruit professional interpreters and translators in operational circumstances • Electronic devices could be used to conduct basic translations

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METHOD	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS	MILITARY ISSUES
	<ul style="list-style-type: none"> • Depth of information/resolution (even more than structured interviews) • Control over the information you're getting • Can support qualitative analysis • Good for both verbal and non-verbal information • Good to test both collective vs. individual effects • Access to subconscious effects • Access to both behavioural and attitudinal effects (even more than structured) • Flexibility—allows interviewer to engage in conversation outside of the scripted interview (e.g. follow-up questions, refute rebuttal statements, and pursue their intuition) <p>Unstructured (Non-directive Interviews)</p> <ul style="list-style-type: none"> • Freedom of expression and freedom of movement (interviewer) 	<ul style="list-style-type: none"> • Difficult in non-permissive environments • Timeliness • Can be biased by both the interviewer/interviewee (input vs. output) (more than structured due to the level of flexibility) • Costly in terms of money • Does not allow big sample • Lack of scientific rigour, and consequently the process is not repeatable and it is difficult to perform quantitative analysis • May be difficult to analyse • Possibly need SME for analysis 	<ul style="list-style-type: none"> • Consulting SME provides a better possibility of understanding your data • Choice of collectors • Intentional influence opportunities • Ability to record and analyse carefully 	<ul style="list-style-type: none"> • Resource limitations • Difficult to hire an outside source to give an unstructured interview because he/she may not gather all necessary data • Audience issues (linked to bias) • Freedom of expression and freedom of movement (interviewee) 	<ul style="list-style-type: none"> • Locally employed civilians may not be as skilled – in these circumstances collection may need to default to structured interviews instead • The characteristics of interpreters can be very important in getting subjects to cooperate: e.g. gender, ethnicity, tribal group. • There is a difference between interpreters and translators – may need one of each to provide different things • It may be difficult to recruit professional interpreters and translators in operational circumstances • Electronic devices could be used to conduct basic translations • PoW debriefing requires specifically trained staff (e.g. handlers). There is no formal access for PSYOPS staff, though they can undertake the relevant required training

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METHOD	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS	MILITARY OPERATIONAL ISSUES
Focus Groups	<ul style="list-style-type: none"> • Depth of information • Allows focus on a specific group • Timeliness, a lot of information quickly • Observation of and insight into group dynamics • Allows gathering multiple opinions as well as discussions • Good for both non-verbal/verbal information • Cost effective in finances and resources 	<ul style="list-style-type: none"> • Subjective/bias (interviewer) • Not good for scientific rigor b/c focus groups are not repeatable due to unique group dynamics • Members can inhibit each other from participating (sometimes due to hierarchical association) • Translation and interpretation during discussions • Never know who/how many will participate in advance • Participants may not tell truth because they are amongst others that may influence them • Difficult in non-permissive environments 	<ul style="list-style-type: none"> • Increase social network of the task force via supporters • Understand and map layout of local social network • Ability to collect longitudinal data (observable behavioural and attitudinal changes) • Ability to collect repeatable measures with same individuals • Focus group can be used to intentionally influence target audience 	<ul style="list-style-type: none"> • Level of hostility from the locals • Some people may not want to participate in discussions (variety of reasons) • Some participants may attend against their will • Discussion leader (seemingly in authority) may ask leading questions or steer discussions/opinions • PSYOPS staff can train infantry to conduct focus groups but they are still often not competent enough 	<ul style="list-style-type: none"> • There can be a significant administrative challenge / burden organising focus group events • PSYOPS staff are usually trained to conduct Focus Groups; however, there is still significant problem of the number of available PSYOPS staff • PSYOPS staff can record and analyse carefully

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	<ul style="list-style-type: none"> • Good for measuring attitudes • Can be relatively inexpensive • Can support quantitative analysis if appropriately-designed • Anonymity for respondents may elicit more truthful and accurate responses • Can elicit both open and closed answers depending on design of questionnaire • Can be used to question a large population sample, which can enhance validity. <p>Questionnaires</p>	<ul style="list-style-type: none"> • The focus of questionnaire is biased by the agenda of the researcher • Respondents may not respond to every question – nil responses • Response rates could be poor, particularly depending on distribution method, such as email or handouts in the street • Uncontrolled or unmonitored distribution of questionnaires may undermine validity and ability to conduct statistical analysis, e.g. one person may complete and return more than one questionnaire 	<ul style="list-style-type: none"> • They can be contracted out, which can create job opportunities for local civilian companies. This also reduces the use of military resources. • They can be conducted without respondents knowing they are for the military 	<ul style="list-style-type: none"> • Distribution and collection of questionnaires may be problematic or even dangerous, particularly in hostile environments. Companies employed to administer questionnaires may be unable or unwilling to access the population sample. • The military may have little or no choice over the calibre of the people administering questionnaires. • Alternatively, they can also be a visible way of showing the population that the military is interested in what they have to say 	<ul style="list-style-type: none"> • Ability to post questionnaires on-line may be constrained by the availability of the internet in the host country • Collection of questionnaires could be a security risk – e.g. collection box for questionnaire returns could be a target for a bomb • Inappropriate collection practices may undermine validity. For example, people who are employed to administer questionnaires may complete the questionnaires themselves, rather than distribute them properly to the population sample.

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	<ul style="list-style-type: none"> Non-invasive - no direct interaction with the subject of the tally required. This can mitigate the bias or the impact of the observer It has a high level of objectivity It can be conducted in non-permissive environments (e.g. soldiers can collect the data or others could be contracted) Some things can be counted remotely (i.e. using satellite information) Counting is independent of the TA, which means it is not dependent on their characteristics (e.g. literacy) Counting can be conducted without specific skills or training (e.g. by infantry soldiers). This means it also does not need to be conducted by PSYOPS officers Can be relatively cheap if conducted with military resources It can be used to measure the activities of all TAs (depending on the measures you choose) 	<ul style="list-style-type: none"> It can be time consuming to collect a significant amount of data each time. It can take time to actually see a change or trend The amount of data points collected will be quite low In order to determine what you want to count, you require a good understanding of the TA Not suitable for measuring attitudes unless they are manifested in easily observable things Counting is independent of the TA, which means it is not dependent on their characteristics (e.g. literacy) Counting can be conducted without specific skills or training (e.g. by infantry soldiers). This means it also does not need to be conducted by PSYOPS officers Can be relatively cheap if conducted with military resources It can be used to measure the activities of all TAs (depending on the measures you choose) 	<ul style="list-style-type: none"> Contracting counting to Locally Employed Contractors can bring employment opportunities and prosperity A count can tally more than one thing at a time The number of uncontrollable variables may make correlating your count with an effect difficult It can be difficult to discern a change where the effect size is small Behavioural observations may not always be representative of a TA's attitudes. This can lead to misinterpretation If the TA is aware they are being observed, they may behave differently, which can affect the validity of the count. The TA may also try to deceive (e.g. enemy might feint a retreat) 	<ul style="list-style-type: none"> It requires a high level of validity in your assumptions regarding the degree to which what you are counting is indicative of the effect that you think it demonstrates (the underlying effect you are really interested in) What you want to count may not be observable Requests for Information (RFIs) to the intelligence collection agencies for relevant material will need an appropriate security classification Security clearance may be an issue depending on what needs to be counted – for example, if the selected indicators are to be found in TS Intel material – PSYOPS or Operational Analysts may need DV clearance 	<ul style="list-style-type: none"> It may be difficult to get sufficient military resources (e.g. infantry) allocated to count things If the indicators require Intelligence material to identify them, buy-in will be required from the collection agencies to get sufficient material collected over time.

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Participant Observation	<ul style="list-style-type: none"> Provides direct access to a TA. This can be very useful for gaining more valid insights (e.g. culture) May not require significant resources (e.g. can be done by one highly skilled individual) The participant can observe behaviours and ascertain attitudes via interaction. Can be a good way of identifying more sub-conscious attitudes, but only for a small sample size The granularity, depth and richness of the data collected can be high Supports qualitative analysis There will be a higher degree of certainty due to the depth of information 	<ul style="list-style-type: none"> It is more difficult in a non-permissive environment Not all TAs are accessible Can take a long time to gain access to a TA There can be a long lead time from establishing the participant to gaining the data Might require a highly skilled or trained individual to conduct the participation (e.g. linguistics skills) Doesn't easily support quantitative analysis It can take a long time to collect the information The data will be less reliable because of the subjective nature of the collection The participant needs to be suited to the environment they are observing. This may require very specific characteristics 	<ul style="list-style-type: none"> Participation can help build up a rapport with a TA over time The data collected can be multi purpose and support a range of different measures The method is dynamic as the participant can be tasked to observe different things over time 	<ul style="list-style-type: none"> There can be a physical threat to the participant in a hostile or non-permissive environment, particularly if they are remote or isolated from their own side (e.g. a spy) A negative experience of participant observation might result in deterioration in the relationship with the TA Resource costs to support a participant observer might be high The participant observer might go 'native' 	<ul style="list-style-type: none"> The use of qualified anthropologists may be constrained by their co-operation with the military: anthropological community maintains a relatively negative perception of, and relationship with, working with the military More feasible sources of participant observation in military operations may include Key Leader Engagement (KLE) or regular routine patrolling

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Requests For Information (RFIs)	<ul style="list-style-type: none"> There are multiple intelligence collection methods and sources that can be drawn upon RFIs can always be submitted (although the content in the returns may vary) A large amount of info can be collected from one source RFIs are cheap to the requester Data will be more relevant for qualitative analysis The data can be on both attitudes and behaviours 	<ul style="list-style-type: none"> The availability of some sources will be limited by the permissiveness of the environment (e.g. HUMINT) The return may not be specifically tailored to your response. It may have been used to support multiple RFIs Some TAs might be more difficult to collect info on than others It can require specific resources such as satellites, or trained HUMINT collectors It is important to ask the right questions in the first place It can take time to collect the information - it may not already be available The data might be irrelevant by the time you receive it By the time you have asked your question, the window for getting the data might have closed The control of the requester over how the data is collected is limited, including control over the reliability and validity of any tools, techniques and methods 	<ul style="list-style-type: none"> Timeliness: Possibility of Intelligence Community respondent sending information to solve the wrong problem ('Type II Error') 	<ul style="list-style-type: none"> See RFI issues under Tallies below 	

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Media Monitoring	<ul style="list-style-type: none"> Availability is not very dependent on the nature of the environment. It is readily available Media output can be collected remotely and directly More appropriate for collecting attitudinal data It can be helpful for measuring sub-conscious attitudes if there is sufficient cultural info for 'reading between the lines' It can support both quantitative and qualitative analysis The data results can be very timely The reliability can be high - it can be a very structured and repeatable process The collector variables should be irrelevant because it is remote (except for skills, etc mentioned above) 	<ul style="list-style-type: none"> Requires a good understanding of cultural norms and how to interpret foreign media output Might require specialist capabilities to translate foreign language media output It will likely be very resource intensive, often requiring particular software and specialist training, skills It is time intensive It will likely be expensive financially 	<ul style="list-style-type: none"> The process can be automated if the software is available The output could support a range of different measures 	<ul style="list-style-type: none"> The media output might not represent 'ground truth' (e.g. because of censorship) The media output might not represent the views of all TAs. For example, it might represent that of the educated classes, rather than the working classes It is difficult to determine which media output is important / available to the TAs 	<ul style="list-style-type: none"> Media monitoring can be a complex activity and time-consuming activity – it could be useful to subcontract this to external agencies such as BBC Monitoring

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Literature Review	<ul style="list-style-type: none"> Can be collected remotely May not require many people to conduct it It can provide the background historical info for the baselines against which attitudinal and behavioural change can be measured Can provide detailed contextual info on a TA The lit might have both quantitative and qualitative insights 	<ul style="list-style-type: none"> Can be difficult to collect info on a particular topic. It may not exist, it may not be in electronic format, it may not be available, etc Requires people with specialist skills (e.g. information specialists, translators, etc) Requires domain knowledge to investigate the appropriate areas (e.g. anthropology, psychology, country expertise, etc) Can be expensive The process should be repeatable and the results should be reliable The level of certainty should be high (albeit dependent on the amount of info that is available) Independent of collector variables 	<ul style="list-style-type: none"> Could be difficult to read and absorb large volumes of data in operational timeframes 		

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SME Consultation	<ul style="list-style-type: none"> SMEs are typically remote from the environment (e.g. Diaspora, émigrés) can be good proxies for TAs in a non-permissive environment SMEs can be consulted on both attitudinal and behavioural effects The data collected will be mostly for qualitative analysis The data can be highly detailed and contextual The data can be collected in a timely manner 	<ul style="list-style-type: none"> Can be difficult to know who an SME is on a given TA. How do you identify experts? How do you judge expertise? Can be difficult to access an SME in a non-permissive or hostile environment Valid knowledge of the TA may not exist, or can be hard to find The SME will often be a member of the TA and will have their own point of view, which means their input may be biased May not be able to trust the SME. This affects the reliability of data. This might also compromise the safety of the mission 	<ul style="list-style-type: none"> SMEs can provide awareness of info that you went previously aware of SMEs can help open doors to other sources and increase your network SMEs might suggest relevant measures that you had not thought of 	<ul style="list-style-type: none"> Interaction with an SME might compromise their neutrality, independence, etc Interaction with an SME might endanger their lives - they might be perceived as a collaborator Data from the SME might compromise the safety of your mission (e.g. if it is very inaccurate or even malicious) The SME may not be an expert after all 	<ul style="list-style-type: none"> May need multiple SMEs for cross-referencing May need indigenous and non-local SMEs There may be strict rules on what / who public money can be spent on CIMIC can be a good means for contacting SMEs for free (e.g. NGOs and members of the local population)

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