

Analytic Strategies And Analytic Tactics

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Abstract

Using ATLAS.ti powerfully is a specific skill that has little to do with learning to operate the software. In this keynote address I present the core of my propositions that will be fleshed out in more practical terms in my forthcoming book, "How to use ATLAS.ti powerfully". The key issue is how we resolve the contradictions between the iterative and emergent nature of qualitative research that is expressed in our analytic strategies, and the pre-determined, linear nature of computer software that is expressed in the analytic tactics we use to execute the qualitative data analysis (QDA). Contradictions can be resolved in several ways: through *denial*, by *choosing* between the contradictory alternatives, or by *trading off* between them. These variously lead to approaches to QDA that I refer to as *one-level*, *two-level*, and *three-level QDA*. However, these approaches to reconciling the contradictions do not easily lead to using ATLAS.ti powerfully. By learning from the general principles described in Edward Luttwak's five-level model of military strategy, I propose a *five-level QDA* that resolves the contradictions by *transcending* them. I propose that this is the best approach to using ATLAS.ti powerfully.

Keywords

ATLAS.ti, analytic strategies, analytic tactics, qualitative data analysis, novice, expert, five-level QDA, five-level strategy, computer-assisted analysis

Introduction

For the last 15 years I have been observing the roughly 2,500 participants of my workshops, and the dozens of researchers I have coached through their projects. How do they choose to use ATLAS.ti? Do they choose to use ATLAS.ti powerfully; and if not, why not? By "using ATLAS.ti powerfully" I mean something very specific: that the software is used from the start of the data analysis all the way through to the end, fulfilling the needs of every phase while remaining true throughout to the iterative and emergent spirit of qualitative research. This is no easy task. I have come to the conclusion that using the program powerfully is a distinct skill, over and above the methodological and analytic skills of the qualitative researcher, and that it is not intuitive. It has little to do with learning to operate the software. Over the years I have developed a set of principles for helping students learn this skill, and I am now working on a comprehensive textbook to be called, predictably, "How To Use ATLAS.ti Powerfully". In this keynote address I am honored to share with you the basic core of my propositions.

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Strategies And Tactics

The term "analytic strategy" appears all over the qualitative research literature, embracing everything from the most over-arching purposes of a research project to the nitty gritty, practical micro-tasks by which data analysis is actually executed, involving colored markers, computer software, or whatever. We

can start by recognizing two major divisions in this wide range of activities: *what you plan to do*, which is the general meaning of a strategy, and *how you plan to do it*, generally thought of as the tactics. Curiously, the term “tactics” is rarely mentioned in our literature, except sometimes as a synonym for strategy, for example “An alternative search strategy is to select a sample of journals and to search for articles...this tactic was employed...” . I propose that the distinction between analytic strategies and analytic tactics is critical when using software for qualitative data analysis (QDA), because the nature of our analytic strategies is not only different from, but contradictory to, the nature of the analytic tactics when these are executed with computer software. Every aspect of the inner functioning of a computer program has been pre-determined by the software developer, but most styles of QDA are the opposite, with no pre-determined analytic tasks to be done without regard to the context and outcome of each previous task. Computer software is one-directional, always performing the same pre-determined task in response to an instruction, and never reconfiguring how a feature will work in the future in the light of how well it has just worked out. But most kinds of qualitative analysis are iterative in exactly this way, with earlier tasks reassessed and re-characterized in the light of later, initially unrelated tasks. Finally, computer software is reliable and predictable, whereas much QDA is the exact opposite: to varying degrees a complex, emergent process. In such systems it is not possible to predict the outcome of a set of tasks even with full knowledge of the workings of the individual constituent tasks .

I must immediately emphasize that the contradictions between the inner nature of QDA and the inner nature of computer software are in no way a barrier to using ATLAS.ti effectively and powerfully. Software to assist us in our QDA cannot and should not become iterative and emergent. But to learn to use ATLAS.ti powerfully for iterative and emergent purposes, the contradictions must be recognized and addressed. Many of the expert users of ATLAS.ti have developed this expertise unconsciously through a succession of projects that gradually harnessed the program in more and more powerful ways. Many of these experts have become ATLAS.ti teachers or trainers, and pass on their experience in different ways. My approach to passing on experience is to help students recognize and consciously address the contradictions I have mentioned.

When faced with a contradiction, no action is possible until the contradiction has been resolved. But there is more than one way to resolve a contradiction, and I propose that it is the way this is done that determines whether ATLAS.ti is used powerfully.

Reconciling Contradictions

One way to deal with a contradictory situation is denial, to not recognize or accept that two things are contradictory and to act as if it is not so. Humans have a remarkable ability to do this, as our brains did not evolve a mechanism for automatically monitoring and resolving inconsistencies in our thinking, instead allowing contradictory ideas and values to be maintained alongside one another . But failing to address the contradiction is not very helpful, and I have observed that this often leads to several alternat-

ives to using ATLAS.ti powerfully. One is that the researcher learns how to operate the software in a mechanical way, senses that the cut and dried software operations bear no resemblance to the ethos of qualitative research, and decides not to use the program after all. Or, the software is used only for the first stages of a project, and when the researcher intuitively feels that using the software for the more iterative and emergent tasks is going to pervert the spirit of the process, they move off- ATLAS.ti, continuing on paper or in a more generic program like Word or Excel. Or, worst of all, the iterative and emergent aspects of the analysis are suppressed in an effort to conduct a data analysis by using the software tools in their most obvious and straightforward ways. None of these alternatives is necessary.

Beyond denial, there are three broad ways to resolve a contradiction: *choosing* between the contradictory alternatives, often referred to as either/or thinking; finding the middle ground or *trade-off* position between the contradictory alternatives in order to partially satisfy the requirements of each; and *transcending* the contradiction, often referred to as both/and thinking, in order to find a larger resolution that fully includes both contradictory alternatives. I propose that different approaches to teaching QDA can be thought of as different ways of resolving the contradiction between our strategies and our tactics, even though this may be unconscious. *Choosing* between the contradictory alternatives is reflected in what I refer to as *one-level* and *two-level QDA*. A *trade-off* between the alternatives is reflected in what I refer to as *three-level QDA*. *Transcending* the contradiction to embrace both contradictory alternatives is reflected in my own approach, *five-level QDA*, which I will be proposing and illustrating in my forthcoming textbook. In this brief address I offer only a sketch of these different approaches, to serve as a contrast to my own.

One-level, Two-level, And Three-level QDA

One-level and *two-level QDA* reflect a choice. Aristotle is famous for pointing out that something cannot be its opposite. Faced with two contradictory things, you must choose between them. If you cannot conduct an iterative and emergent process with a pre-determined sequence of software tools that has a predictable form of outcome, you will likely choose the iterative and emergent process. Texts that describe what I call *one-level QDA* treat "analytic strategy" as a unitary activity, with *what you plan to do and how you plan to do it* a single topic, leaving it to the researcher to decide how to execute the strategies. As an example, Kathy Charmaz's widely used grounded theory text is popular because it is highly practical, but leaves it to the reader to choose paper and pencil, or Word or Excel, or QDA software, or any other desired tactic to execute the strategies described and illustrated in the text. *Two-level QDA* goes a little further by acknowledging the distinction between strategy and tactics, but matches the two as closely as possible, thereby avoiding any contradiction. Miles & Huberman's classic work of this genre offers only tactics that are consistent and compatible with the various analytic strategies that they review, and focuses on two dimensional graphical displays as the most efficient tactic. Bernard & Ryan take a similar approach, and refer those interested in using QDA computer software to other sources. A differ-

ent approach to *two-level QDA* is to first present a range of analytic strategies, and then separately describe only those features of various software programs that could be used specifically for these purposes. Renate Tesch was the first to offer a catalogue of the earliest programs and how their features could be specifically used. Guest, MacQueen, & Namey offer a more recent example of *two-level QDA*, in which one chapter of their text essentially maps the analytic strategies described in earlier chapters to the software features in each of the major QDA packages, to facilitate the selection of a package with features (tactics) that are compatible with the strategies they have described. This seems appropriate, as their method – applied thematic analysis – is at the less iterative and emergent end of the spectrum of methods and engenders less of the challenges involved with using QDA software powerfully.

Some writers have bridged the gap between the iterative and emergent ethos of qualitative methods and the pre-determined mechanisms of computer software by introducing a middle level of guidance, and which I therefore call *three-level QDA*. This approach implicitly resolves the contradictory alternatives by finding a middle ground or *trade-off* between the two. Trade-offs partially satisfy each pole of a contradiction, and avoid the need to choose between them – a good thing – but do not fully satisfy either pole, and may lead to something worse than either one alone – a bad thing. *Three-level QDA* recasts the qualitative method into a model of generic analytic processes that can be executed on QDA software in a straightforward way. The resulting middle-level model is more structured and systematic than a fully iterative and emergent process, but is not as strictly procedural as the operations of computer software.

An early example of *three-level QDA* is the NCT model, or Noticing-Collecting-Thinking, explicitly offered as a trade-off level of guidance in learning to use early versions of The Ethnograph. The model serves two purposes. First it offers some insights into the ideas and practices from which The Ethnograph emerged and continues to evolve. Second, it is also a simple introduction for the newcomer of QDA.

The purpose of this model is to show that there is a simple foundation to the complex and rigorous practice of QDA. Once you grasp this foundation you can move in many different directions.

More recently the NCT model has been developed for use as a general approach to QDA called “Sort and Sift: Think and Shift”, for use with the current generations of ATLAS.ti and MAXqda software.

Another approach to three-level QDA is what Davidson and di Gregorio refer to as a “meta-perspective [on QDA] that is organized around the processes and tasks involved in qualitative analysis” rather than the tools of the software programs (p. 633). One example is di Gregorio & Davidson’s middle level universal framework for designing and conducting qualitative research in a software environment that describes “the core design decisions [common to the wide variety of available approaches for designing qualitative research] regardless of the paradigmatic stance or research tradition” (p. 15). Another is Lewins & Silver’s model of the basic processes common to all QDA software packages (p. 13). The elements of the model are expressed neither in purely methodological terms nor in terms of specific software operations, but in a middle ground that is a trade-off between the two.

Military Strategy And Tactics

I do not suggest that *two-level QDA* is an advance over *one-level QDA*, or that *three-level QDA* is superior to *two-level QDA*. There are surely inherent benefits and shortcomings of each, and there are surely research contexts in which each is most helpful. But in my quest to crystallize explicit principles for using ATLAS.ti powerfully, I felt the need to reconcile the contradiction between our analytic strategies and tactics in a way that requires neither choosing nor trading-off between them. I searched for guidance in other fields that discussed the relationship between their own strategies and tactics, but was mightily disappointed. Many texts and articles encouragingly include strategy and tactics in the title, then illuminate the strategies but never mention tactics again, or deal first with strategies and then tactics but do not relate the two, or simply use the words strategies and tactics as synonyms. (An exception is Gorden (1987), who explicitly distinguishes three levels of the interviewing process – strategy, techniques, and tactics – and the relationships among them. This model is very helpful for comprehending and teaching the interviewing process, but did not contribute to the development of my *five-level QDA*.)

Only one field – military studies – offers a helpful guide, even though most qualitative researchers seem to find military strategy a distasteful metaphor for our field, so much of which is in the helping professions and geared towards the betterment of mankind, far from thoughts of wars, battles, and weapons. Yet this is the one field in which the contradictions between strategies and tactics have been thought through in detail, most notably by the military strategist Edward Luttwak. It is regrettably beyond the scope of this address to describe Luttwak (2001)'s five-level model of strategy in detail. I shall limit myself to telling you about the model, why it is an apposite framework for conceptualizing QDA, and how it has allowed me to crystallize my observations and intuitions about how to use ATLAS.ti powerfully.

Luttwak (2001) describes general principles of strategy that can be applied across widely diverse situations of human conflict, thus offering the possibility of application outside the domain of warfare. But in this context of conflict an adequate analogy to QDA? I believe it is. QDA can be considered a kind of struggle between our unstructured data, that mass of words or images or sounds, and the researcher creating a structure that will, as it were, fit over or be imposed on the mass of unstructured information, revealing patterns of meaning. It may not ring true to see your data as the enemy; but with poetic license, the experience of discovering the patterns of meaning that comprise our findings is an exercise in taming our unstructured data, a bumpy path with varying degrees of tortuousness, depending on the degree of iteration and emergence inherent in the chosen research method.

What is to be gained from a close comparison of military strategy to the practice of QDA? First, I have recognized parallels in Luttwak (2001)'s model to my own observations and insights about using ATLAS.ti powerfully that can now be more easily turned into explicit and explainable courses of analytic action. Second, because the insights come from an unfamiliar domain, it is easier to avoid the taken-for-granted assumptions we have in our own domain, particularly in the mental schema we all have from our long experience of using software for much more well-defined purposes than QDA. Finally, as an aid to

teaching, the rich body of elaborated examples that Luttwak (2001) provides are more concrete than any illustrations we can offer from examples of data analysis, and may provide persuasive arguments to students in resisting the pull towards a more step-by-step or pre-determined approach to QDA when using computer software.

Five-level QDA

Luttwak (2001) identifies five levels of strategy, and I draw parallels to QDA at each level, leading to my proposal for *five-level QDA*. Each level of military strategy has a different relationship to the *territory* of warfare, and as a consequence a different role and type of activity. I propose that this is analogous to the different relationship of *context* at each of the five levels of QDA (see Table 1).

Levels of military strategy and the corresponding levels of QDA, in terms of their relationship to territory and context. Grey cells indicate that level of strategy is independent of territory/context, white cells indicate dependence on territory/context.

LEVELS OF MILITARY STRATEGY AND THEIR RELATIONSHIP TO TERRITORY				
>>>>>>>>> from the most general level of strategy to the most specific level of tactics >>>>>>>>>				
<u>Grand strategy:</u>	<u>Theater:</u>	<u>Operational:</u>	<u>Tactical:</u>	<u>Technical:</u>
National values and attitudes apply to any territory of interest	Entire battles, concerned only with a specific, self-contained territory	Generic strategies of deployment within a battle, relevant to any geographic setting	Combinations of technical resources, critically dependent on the details of terrain	Developed away from the battlefield, unconcerned with territory

LEVELS OF QDA AND THEIR RELATIONSHIP TO CONTEXT				
>>>>>>>>> from the most general level of methodology to the most specific level of software tools >>>>>>>>>				
<u>Research question and methodology:</u>	<u>Method and analytic tasks:</u>	<u>Translation:</u>	<u>Combined and unusual uses:</u>	<u>Software tools:</u>
The philosophy and universe of interest that comprises the boundaries for the context, but not the context itself	The general and specific courses of action in a study, dependant on the context of the study	Translating the units of analytic tasks into the units of software tools or combined and unusual uses of tools, and then translating back again	Combinations of software tools, or tools used in an unusual or unintended way, always unique to a context	Individual tools that function without regard to the content of the data

Table 1: Military strategy and QDA

The five levels of strategy in warfare range from the most general level of national goals and values to the most specific level of individual pieces of hardware. Let us go through them briefly, one by one. The most specific level is the *technical* level of individual weapons or equipment that are developed and tested on firing ranges away from the battlefield by engineers. At this most specific level of strategy, territory is notable for its complete absence: strategy concerns only technical excellence of the weapons themselves, regardless of where they may be used. In QDA this is the level of individual *software tools* within a program, developed without regard to the context of any particular research study. I should

mention that Luttwak (2001) offers many examples and insights about the relations between weapons designers and soldiers that impact the practical value of new weapons. These apply well to the relations between software developers and qualitative researchers, but I will not pursue this issue further in this address.

Let us move to the next level. In actual battle, weapons and equipment are not used alone, but together in combinations of different kinds in a particular terrain. Success depends on the next higher *tactical level* of strategy, a more subtle skill that depends more on “reading” the challenges of the terrain than merely operating the weapons (Luttwak, 2001, p. 104). In QDA I call this the level of *combined and unusual uses*, by which I mean using combinations of software tools, or using tools in an unusual way not considered or intended by the developer, put together by the researcher on a moment by moment basis based on the needs of a particular analytic situation. The skill is in harnessing the software tools appropriately for each situation; sometimes using a software tool by itself in a straightforward way that is obvious from its design, and sometimes in a more sophisticated way, by using a combination of tools or using a tool in an unusual way.

However, individual tactical units are only a fragment of a larger battle. Critical to the overall success is the next level of strategy. This is the third or middle level of strategy that “embraces battles in their dynamic totality”. Luttwak (2001) refers to this as the *operational level*. This consists of adding or sacrificing various tactical units within the larger battle without directly influencing the activities of any individual tactical unit. This middle level of strategy is Luttwak (2001)’s unique contribution to the field. In my mind it is the key to using ATLAS.ti powerfully. Bear with me while I first describe the two most general levels of strategy, and then return to discuss the crucial relevance to us of the middle *operational level*.

The most general level of *grand strategy* consists of the national values that guide the choices made throughout the conduct of a war – the territory of warfare itself is not the underlying subject matter of the strategy. In QDA this is the level of the *research question & methodology* that primarily consists of setting various boundaries regarding how the context will be investigated. The next level of strategy level is the *theater level*. A theater refers to many battles taking place in a self-contained area of territory “in which events outside its boundaries should have no direct effect within it” (p. 138).

In QDA I refer to this as the level of *method & analytic tasks*, which are directly generated from the *research question & methodology*. These comprise the various courses of analytic action that allow the research question to be answered. There is an enormous variety of approaches to generating the *method and analytic tasks* in order to answer a particular research question that reflects a particular methodology. This paper assumes that the *method and analytic tasks* have been generated, as I am primarily concerned here with the middle level of strategy that serves as the bridge between the two more general levels of strategy and the two more specific levels of tactics. But before returning to that middle level, I will just say that there are two major approaches to generating the *method and analytic tasks*. One major

approach is to use a generic method that is used in every project to generate analytic tasks based on the specifics of the *research question & methodology*. A good example is Frieze's adaptation of the NCT model of QDA . The other major approach, and the one that I use, is not to have a generic method, but to begin each project by developing a specific conceptual framework based on the nature of the methodology and the structure of the research question, and that serves as the method of identifying analytic tasks for answering the research question. One reason that this is my approach is that I work with researchers from all across the methodological spectrum, from the most structured kinds of projects to the most interpretive, and a single method or model would not adequately serve all these purposes.

The Middle Level Of Strategy

To summarize, we now have two general levels of strategy – the overall *grand strategy* of the war, and the next *theater level*, which consists of all the battles taking place in each self-contained territory. We also have two more specific levels – the most specific *technical level* of individual weapons, and the next *tactical level* of small units fighting in specific terrains. As you can see in Table 1, bridging the gap in the middle is the all-important *operational level* of strategy, responsible for the success of whole battles, of which many are occurring within a single theater of warfare.

The *operational level* consists of “generic methods of war ... [which] could be much the same in any number of geographical settings” (p. 112; 138). It is a more abstract layer of activity consisting of adding or sacrificing tactical units within a battle, thereby adding something that is “more than the sum of the tactical parts” (p. 110). In QDA terms, it is a level of data analysis activity that is the same process in any study regardless of context. I refer to this middle level of QDA activity as the level of *translation* that bridges the gap between the *method & analytic tasks* (what you plan to do) and the *software tools* and the *combined & unusual uses* of tools (taken together, how you plan to do it).

This middle level of strategy has no existing counterpart in current descriptions of the QDA process, just as it did not exist formally in military strategy until Luttwak (2001) identified it and successfully introduced it to the US Army Field Manual. This middle, operational level of military strategy has always been undertaken by successful commanders, but before Luttwak (2001) introduced the concept it had not been explicitly recognized as a level of strategy that must be made explicit as an activity, and taught to new officers. Similarly, expert users of ATLAS.ti have learned over time to translate between their *method & analytic tasks* and the *software tools* and the *combined & unusual uses* of tools, but perhaps without conscious recognition that this is what they are doing. It is my contention that this *translation* activity should be made explicit and taught to new users of ATLAS.ti.

The need for *translation* is due to the different natures of the different levels. The *method & analytic tasks* are always expressed in units of analysis, such as individual people, or groups of people such as all the teachers in a school, or the school itself, or anything – “newspapers, folk tales, countries, or cities” .

The *software tools* could also be considered for this purpose to reflect “units” that are entirely different – in ATLAS.ti, for example, they are the document, quotation, family, coded quotation, and so on. The *combined & unusual uses* of the tools could also be considered for this purpose to reflect “units” that are quite different again, absolutely unique to the immediate short-term purpose for which they were constructed. The bridging activity at the middle level is *translation* between the units of a particular analytic task to the “units” of the *software tools* or *combined & unusual uses* of the tools that will be used.

I make the claim that *translation* serves to *transcend* the contradiction between the nature of analytic strategies and the nature of computer software, creating a larger framework or workspace that allows ATLAS.ti to be used powerfully from start to finish of a project without sacrificing the iterative and emergent ethos of qualitative research. This contrasts with the approach of *three-level QDA*, which bridges the gap between analytic strategies and computer software with a generic model of analysis at the middle level which is effectively a *trade-off*, an analysis model that is more highly-specified than a research method or question, but less highly-specified than an actual software operation. This draws attention away from what I consider to be the all important *translation* activity between the *method & analytic tasks* that are specific to a project, and the appropriate use of *software tools* and *combined & unusual uses* of those tools.

The Range Of Activity At The Middle Level

One characteristic of Luttwak (2001)'s middle *operational level* is that the value added at this level completely depends on the “style of war” (p. 113). Luttwak (2001) presents a spectrum of styles from the most simple to the most complex. At the simple end of more routine and repetitive strategies (e.g. wars of attrition, such as WWI trench warfare) strategies and tactics are most similar. There is little value to be added at the *operational level*, as tactics are simply repeated if they fail. At the most complex end of the spectrum (referred to as relational maneuver, such as the WWII Blitzkrieg strategy), strategies and tactics are most different, and enormous and critical value is provided at the *operational level*. The parallel to QDA is uncanny, which also has a wide range of “styles”, or methodologies, and which determine how much value is provided by the *translation* activity at the middle level.

There are many schemes for characterizing methodologies, and thus the “style” of the QDA. For example, one well known scheme is Cresswell 's five traditions, and another is Wolcott 's distinction between methodologies that describe, explain, or interpret. In the past, when helping researchers use ATLAS.ti powerfully, I have characterized methodologies in a different way, by their “degree of structuredness”, as this determines the way in which ATLAS.ti will be used. At the more structured end of the methodology spectrum, such as content analysis, there is less iteration and emergence, and less need to translate, as the units of the *method & analytic tasks* and the “units” of the *software tools* and the *combined & unusual uses* of the tools are relatively, if not wholly, consistent. As methodologies become more iterative and emergent at the more unstructured or phenomenological end of the methods spectrum, the

units become more discrepant, and the value added by conscious *translation* is significant, as it allows the analysis to be executed in software without compromising the ethos of the research method. I therefore characterized whole projects at the level of *research question and methodology* as existing at a point on the spectrum of structuredness, which determined in what way ATLAS.ti would be used powerfully for the whole project. This implied that a content analysis at the more structured end of the spectrum, at which the units of strategies and tactics were more similar, required less *translation*, whereas an interpretive phenomenology would require much more. Yet a content analysis might involve some highly-unstructured aspects of its *method and analytic tasks* that required translation into an operation that could be executed in ATLAS.ti: for example, generating an initial, exploratory set of codes from a subject matter expert's impressionistic review of a sample of the data. Similarly, a phenomenology might involve a highly-structured method and analytic task to address a particular aspect of the research question, such as exploring the frequency distribution of initially-coded lived experiences between the male and female groups of respondents, to follow up a hunch about gender before going further in the search for meaning. Taking advantage of Luttwak (2001)'s model allowed me to see that from the perspective of QDA, the degree of structuredness is not an attribute of a whole methodology and project at the most general level of strategy, but is rather a characteristic of each *method & analytic task*, of which there may be many in each project, each with its own degree of structuredness. This determines how much *translation* is needed at the middle level for each *analytic task*, just as the amount of activity that is of value at the *operational level* of warfare depends on where the conflict lies on the simple to complex spectrum of "styles of war". Virtually every project, even in the most interpretive or phenomenological methodologies, benefits from conscious *translation* activity at the middle level of strategy.

Three Aspects Of Translation

I will briefly comment on three aspects of the process of translation. The first I have already mentioned, that it must be a conscious activity. One must be clear at which of the five levels one is currently "thinking at", consciously identify the units at that level, and consciously *translate* between levels. The second is that the activity of *translation* ranges from *selection* to *construction*. *Selection* refers to translation of units by *selecting* appropriate individual *software tools* whose "units" map to the units of the *analytic task* in a simple one-to-one manner. *Construction* refers to using *combinations* of tools, or using a tool in an *unusual* way, when the units of an *analytic task* does not seem to map directly to any one *software tool* or the use of a tool in its straightforward, intended, or obvious way. This *translation* process cannot be reduced to a small set of well-defined, reliable procedures, as many situations involves subtleties that make the process somewhat different in each project. The skill of *translation* develops as more and more ATLAS.ti projects are completed, and the reasons become apparent for the more and less successful efforts to use the program powerfully. The best way to communicate and learn this skill may be through an

apprenticeship to an experienced qualitative researcher who has used ATLAS.ti successfully on a wide range of projects. This is unfortunately not very practical in our modern world. As a substitute, I will be offering a wide range of worked examples in my textbook that I hope will serve as a guide to the process.

A third aspect of *translation* is that it is a two-way process. It goes from *analytic task* to *software tools* and/or the *combined & unusual uses* of tools, and then when the task is completed, the result is translated back to the units of the *analytic task* before determining the next task. However, one principle from Luttwak (2001) has given me confidence that I am correct in the corresponding principle of my teaching: while it is a two-way process, movement is *initiated* from the general levels of strategy to the specific levels of tactics. The levels of military strategy are not well-defined, independent spheres of activity, as this very brief exposition may have given the impression. In reality the levels are inter-dependent, with the activity at each level highly dependent on what is happening at levels more and less general. Critically, the activity at each level is subordinated to what is happening at the next more general level. For example, the design of new weapons (at the most specific *technical level*) is most effective when it takes account of the needs of the tactical units using them in particular terrains (i.e., subordinated to what is happening at the more general *tactical level*). It should never be the other way around, with the tactical activity in the field determined by the interests of the engineers in designing technically excellent but impractical weapons for a terrain. This subordination to more general levels is the same at every level. Similarly, all decision making when deciding to use ATLAS.ti powerfully must be from the most general to the most specific, from writing the *research question* and selecting the *methodology*, to generating the *method and analytic tasks*, and finally *translation* of the *analytic tasks* into tasks that can be implemented in ATLAS.ti. The first sign of using ATLAS.ti superficially is moving from the specific to the general: from learning the *software tools* and then look around for ways to make use of them in the data analysis.

Conclusion

In this brief address I have certainly not done justice to the potential of Luttwak (2001)'s richly illustrated model for conducting and for teaching QDA. I have also not been able to fully justify my propositions, but merely stated them. But I hope I have given an idea of alternative ways to resolve the contradictions between the ethos of qualitative research and the nature of computer software, and I hope I have whetted your appetite for an expanded as well as practically oriented treatment in my forthcoming textbook.

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