



## Journal of Management History

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### Article information:

To cite this document:

Malcolm Brady, (2011), "Improvisation versus rigid command and control at Stalingrad", Journal of Management History, Vol. 17 Iss 1 pp. 27 - 49

Permanent link to this document:

<http://dx.doi.org/10.1108/17511341111099565>

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# Improvisation versus rigid command and control at Stalingrad

Improvisation  
versus command  
and control

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## Abstract

**Purpose** – The merit of improvisation over command and control as an organizational approach is the subject of much debate in the management and emergency literatures. The purpose of this paper is to examine tactics employed by the two leading protagonists at the Battle of Stalingrad – Field Marshall Friedrich Paulus on the German side and General Vasily Chuikov on the side of Russia – and seek to identify the reasons for Chuikov's victory over Paulus and draw lessons from this for practicing managers.

**Design/methodology/approach** – The research project examined over a dozen publicly available texts on the battle, in the light of the crisis management and strategy literatures.

**Findings** – The paper shows how Chuikov improvised to meet the demands of the situation, relaxed the command and control structure of the Russian 62nd Army and developed a collective mind among Russian troops and that this triple approach played a significant role in his victory over Paulus.

**Originality/value** – The case provides support for the view that improvisation is important in crisis response and can be applied within a hierarchical command and control structure. The paper puts forward a framework for managers to respond to crisis based on two continua: mode of response (improvised or planned) and means of control (via the hierarchy or via rules embedded in a collective mind).

**Keywords** Strategic leadership, Military actions, Warfare, History, Germany, Russia

**Paper type** Research paper

## Introduction

This paper examines what occurred when a rigid command and control approach to organization came directly into conflict with a more flexible approach based around improvisation. This happened at Stalingrad on the Eastern Front during the Second World War where German and Russian troops fought relentlessly over that central Russian city along the Volga river (present day Volgograd) from the end of July 1942 until early February 1943. While the battle lasted for seven months, the paper concentrates on the crucial eight weeks from mid-September to mid-November 1942 when German forces made three massive but ultimately unsuccessful assaults on the city. The initial research question was:

*RQ.* How did it arise that the advance of the mighty German army into Russia was halted at Stalingrad?

As the research continued, it became clear that the answer centred around issues of strategy, leadership and tactics – concepts that are managerial as well as military.

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The author would like to thank the two anonymous reviewers, Aidan Walsh and David van Fleet, for their many and useful suggestions. The author would also like to thank Ciarán O'Shea Brady for first stimulating his interest in this topic.



The paper aims to show that there is much to learn from the battle not just for military strategists and historians but also for scholars and students of management.

The paper discusses how the Commander of the Russian forces, General Vasily Chuikov, relaxed the command and control structure in a number of significant ways and that this dramatically improved the performance of his forces; he was a natural improviser who used to deadly effect the resources at his disposal and achieved victory against the odds. General Friedrich Paulus (appointed Field Marshall in January 1943), Commander of the German forces, stuck rigidly to the formal command and control system to the bitter end and in doing so lost his entire army: over a quarter of a million men. The paper focuses on the tactical military improvisations made by Chuikov to suit the particular circumstances of the defense of the city. The paper seeks to show how a judicious combination of formal structure and improvisation can be a useful mode of response in situations where resources are in short supply, circumstances are rapidly changing and communication is difficult. The paper also shows how developing a "collective mind" among the Russians troops and inhibiting "sense making" by the German forces greatly influenced the outcome in favour of the Russians. The paper suggests a framework for responding to a crisis situation based on two dimensions: mode of response (improvised or planned) and means of control (via the hierarchy or via rules embedded in a collective mind).

The paper has relevance for crisis management where gaining an appropriate balance between improvising a rapid response to unfolding events and carrying out a plan of action is an important research topic (Webb and Chevreau, 2006). The paper also has relevance in the broader field of strategic management where achieving a balance between planned action and response to events as they unfold is an important topic (Mintzberg and Waters, 1985). The paper is also relevant to the field of decision making where delegation of decision making and autonomy in making those delegated decisions is an important topic both in the military (see Krulak's, 1999, concept of the "strategic corporal") and in business organizations (refer to the Chern's, 1976, 1987, socio-technical design principle of "minimum critical specification").

The remainder of the paper is organized as follows: first, I briefly review the contribution of military history to management and discuss the literatures on improvisation and command and control; then I discuss the research approach; I then briefly review the key events of the battle itself; after that I discuss Paulus's rigid command and control approach; then I discuss Chuikov's tactical improvisations, the consequent relaxing of the command and control structure, and the development of a collective mind among Russian defenders; I then compare and contrast the two approaches and discuss a model of crisis response; finally, I conclude.

### Literature review

War has informed strategic thinking since the subject first evolved with military strategists Sun Tzu (2002) and Clausewitz (von Clausewitz (1993); Howard, 1983) regularly quoted in business strategy texts and essays. The word strategy is itself of military origin deriving from the Greek for generalship. Many terms widely used in business strategy originated in the lexicon of warfare: headquarters, chain of command, units and divisions, line and staff, officers and men, targets and objectives, forces and frontlines. Both war and business are carried out by large organizations, by coordinated activity designed to achieve specific objectives and by groups of people who compete

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against each other for resources. Business leaders fight for survival in a hostile environment and compete in the war for talent. Business competition is often viewed as war with markets the battlefield and competitors the enemy. Rivalry among industry incumbents can be described as “warlike” or “cutthroat” (Porter, 1980, p. 18). Porter (1980, pp. 47, 57) talks about choosing which competitors to “pick a fight with” while at the same time avoiding “strategic moves that will touch off bitter warfare”. Offensive and defensive strategies are implemented in order to gain competitive advantage (Porter, 1985, Chapters 14 and 15). Indeed, the major business strategy approaches of positioning (Porter, 1980, 1985) with its emphasis on erecting barriers to protect the firm’s position, value innovation (Kim and Mauborgne, 2004b) with its emphasis on finding uncontested territories (Kim and Mauborgne, 2004a) and time-based competition using first-mover advantage all draw their inspiration from military manoeuvres. See Ahlstrom *et al.* (2009) for a succinct review of the linkages between management and military history.

Many management researchers have examined war and military situations with a view to deriving insights useful to the present-day managers: Ahlstrom and Wang (2009) examine the extent to which groupthink played a role in the collapse of the French army in the early days of Second World War; Ahlstrom *et al.* (2009) reinterpret two major military-historical events for a management audience: the events leading to the outbreak of First World War and the different preparations made by the German and French forces during the 20-year inter-war period (1919-1939); Grattan (2009) examines the implementation of strategic alliances among the allied powers fighting on the Western Front during First World War; Dixit and Skeath (2004) draw on the Cuban Missile Crisis in their discussion of “brinkmanship”; Weick and Roberts (1993) developed their concepts of “collective mind” and “heedful interaction” from observations made on organizational activity taking place on an aircraft carrier. War is also an extreme form of crisis and several authors have drawn on war and military situations to give insight into the nature of crisis and crisis management (Dijkstra, 1999; Honig, 2001; Arbuthnot, 2008). Quarantelli (2001) applies the term crisis to a wide variety of “social occasions” ranging from one-time events such as a plane crash to “the long-lasting multitude of activities occurring during a war”. While learning from crises has long been an active research topic in general management and strategy (Anderson, 1983; Starbuck and Milliken, 1988; Roberts and Bea, 2001; Carmeli and Schaubroeck, 2008) the September 11 terrorist attacks on the USA and the consequent “war on terror” has generated renewed academic interest in crises caused by military and quasi-military style action (Perlinger *et al.*, 2005).

The importance of improvisation in crisis response was well demonstrated during the Apollo 13 mission when the life-support system broke down and a repair had to be urgently effected using materials to hand in the spacecraft, a response dramatically reconstructed in the eponymous Hollywood movie. Many authors in the crisis management literature have recognized the importance of improvisation. Drabek and McEntire (2002) suggest that the twin foundations in crisis response are improvisation and preparedness. Webb and Chevreau (2006) suggest: “improvisation is a key ingredient to effective crisis[. . .]management” and suggest that creativity and flexibility rather than centralized command and control should be encouraged. Mendonca and Wallace (2004) examine the process of improvisation during an extreme event: Hurricane Camille. Weick (1993) showed how improvising an escape fire saved the life of foreman Dodge during the Mann Gulch disaster; Weick (1993, 2007) argues that most

of Dodge's colleagues could not "make sense" of the situation which impaired their ability to improvise and, following their instinct to run, they perished in the fire.

Webb and Chevreau (2006) define improvisation as the carrying out of activities in non-routine, atypical or unexpected ways. Whereas, they focus on activity. Weick (1993) emphasises structure: he suggests that improvisation is the rapid substitution of one organizational order with another that is more appropriate and puts forward improvisation as a means of preventing organizational collapse in a disastrous situation. Moorman and Miner (1998) define improvisation as "the degree to which composition and execution converge in time"; they emphasise the temporal nature of improvisation and the near simultaneity of thought and action: the more proximate the design and implementation of the activity the more it is improvised; under their definition the opposite of improvisation is planning where thinking and doing are clearly separated in time. Improvisation therefore comprises three elements: rapid substitution of one order with another more appropriate order, with little time lapse between thinking and doing and making use of locally available resources in new and novel ways.

While improvisation has become more popular in the crisis management literature, overemphasis on planning has come in for criticism in the strategy literature. Cummings and Daellenbach (2009) chart the decline in the use of the term "planning" as a keyword in the literature and its gradual replacement with "strategy". Mintzberg and Waters (1985) point out that good strategy making requires both deliberate planning and judicious adapting to circumstances as they unfold. Helmuth von Moltke (the Elder), Chief of Staff of the Prussian and German forces from 1858 to 1888, said that strategy is "the evolution of the original guiding idea according to continually changing circumstances" (Hinterhuber and Popp, 1992). Military strategists formalise these changing circumstances as the "friction" (von Clausewitz, 1993, pp. 138-40) that builds up over time and is "a natural consequence of the chaotic and complex nature of the strategic environment, chance and human frailty" (Yarger, 2006, p. 10). However, despite the decline in the status of planning as a topic in the literature, several authors suggest that planning still has a significant role to play in strategy making (Ocasio and Joseph, 2008; Vilà and Canales, 2008; Whittington and Caillaet, 2008).

The concepts of chain of command and span of control in management studies stem from the work of early theorists Max Weber and Henri Fayol. Both concepts relate to the authority structure inherent in an organizational hierarchy, the chain of command referring to the mechanism by which instructions are passed down through hierarchical layers and the span of control referring to the number of subordinates who report to a superior (Jones and George, 2008, pp. 55-61, and 403). Both concepts, however, originate in the military and both were well known to Clausewitz in the Napoleonic era and Sun Tzu in feudal China over 2,000 years ago. Both authors also noted the close relationship between them:

- a. The whole will be unwieldy if it has too few subdivisions. b. If the subdivisions are too large, the commander's personal authority will be diminished. c. Every additional link in the chain of command reduces the effect of an order in two ways: by the process of being transferred, and by the additional time needed to pass it on. It follows that the number of subdivisions with equal status should be as large as possible, and the chain of command as short as possible; the only qualification being that command is difficult to exercise over more than eight to ten subdivisions (von Clausewitz, 1993, p. 351).

1 [...] The control of a large force is the same in principle as the control of a few men: it is merely a question of dividing up their numbers. 2. Fighting with a large army under your

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command is nowise different from fighting with a small one: it is merely a question of instituting signs and signals (Sun Tzu, 2002, p. 31).

The instruction (command) and the ability to ensure that the instruction is clearly understood and carried out (control) are two separate but inter-related elements of organization. Pigeau and McCann (2002) suggest that the earliest military use of the conjunction of the two terms – “command and control” – was in the 1960s. These authors suggest once again separating out the two terms and provide new meanings: the function of control is “to enable the creative expression of will and to manage the mission problem in order to minimize the risk of not achieving a satisfactory solution” whereas the function of command is “to invent novel solutions to mission problems, and to provide conditions for starting, changing and terminating control, and to be the source of diligent purposefulness”. While most acts involve “a sophisticated amalgam of both commanding and controlling” they place control (the structures and processes) in a subordinate position to command (the human will necessary to accomplish the mission).

The hierarchical command and control model has come in for much criticism in the crisis management literature. Quarantelli (1997) suggests: “imposing an authoritarian and centralized structure on the crisis” is an “incorrect assumption” in crisis response. Drabek and McEntire (2002) suggest: “the predominant bureaucratic model is flawed” while Bigley and Roberts (2001) point out that although bureaucracies works very well in stable environments they “severely limit the organizational flexibility needed to cope effectively with complex, ambiguous, and unstable task environments”. Lagadec (2004) examined the response to the French heat wave of August 2003 and concluded that overly rigid bureaucratic processes were a contributing factor in the disaster. Takeda and Helms (2006) report that the bureaucratic model of response to Hurricane Katrina was “wholly inadequate”. The academic view of the importance of improvisation in crisis response is at variance with that of practitioners and practitioner organizations where centralisation of authority is often the outcome in practice (Papadakis *et al.*, 1999). The author recalls a discussion with a practicing fire officer who held the view that command and control was the only approach to organization when responding to a crisis.

### Research method

This research project was carried out using an inductive, grounded theoretic style of approach where the theoretical framework evolved as the reading continued (Bryman, 2008, p. 541). Such an iterative approach where the research activity moves between data collection and theorising is common in qualitative research (Bryman and Bell, 2007, p. 407). Yin (2003, pp. 38, and 129) similarly suggests that in case study research the process of explanation building is iterative; he also suggests that findings from a case study should be generalised to theory and not to other situations; this I have attempted to do. At the beginning, my interest was general and was simply to find out about the details of the battle. The scale of the battle and the magnitude of the disaster for the Germans was stunning. My question soon became more specific: how did it come about that the Germans, at the height of their powers, suffered such a massive and catastrophic defeat at the hands of what they anticipated to be an inferior Russian force? As I read more widely and with more focus I came to the view that the defeat was due to strategic mistakes, deficiencies in top-level leadership and tactical weaknesses on the part of the Germans; and the corollary for the Russians: strategy that became more sound as it evolved, strengthening political and military leadership and superior front-line tactics.

For the purpose of this paper, I explored more deeply into the third of these three elements: the tactical superiority of the Russians during the early phase of the battle. Three elements were significant here: improvisations made at the front line, structural changes to the command and control system and motivation of Russian troops through development of a collective mind. Theoretical sensitivity (Strauss and Corbin, 1990) was provided by readings from relevant management literatures as discussed above: improvisation in crisis situations, strategy as adapting to circumstances, command and control and collective mind and sense making. Such theoretical sensitivity was vital in charting a course through and identifying patterns in the thousands of details contained in the “thicket of prose” that made up the readings, a well-known difficulty in social science research (Bryman, 2008, p. 538).

The readings examined for the purpose of this research project comprised of more than a dozen books including most of the major works about the battle written in English or translated into English (Erickson, 2000; Beevor, 1999; Jones, 2007; Roberts, 2004; Clark, 1995; Craig, 2000; Cawthorne, 2005; Taylor, 2004; Grossman, 2005; Leach, 1995; Merridale, 2005; Middlebrook, 1995; Jukes, 1968; von Manstein, 2004, Chapter 12; Chuikov, 1964; Schröter, 1958). These publicly available readings provided the data for the paper. While the readings all centred on the Eastern Front of the Second World War and the battle of Stalingrad, they were written by people from different backgrounds and came from several different perspectives. Authors were of a number of different nationalities: Russian (Chuikov and Grossman), German (Schröter and Manstein), British (Beevor and Erickson), US (Craig) and from the point of view of both sides of the conflict: Russian (Chuikov, Merridale and Jones) and German (Schröter and Beevor). Several of the readings were written shortly after the conflict (Chuikov, Schröter, Manstein, Clark and Jukes), others after a number of decades had elapsed (Craig and Erickson), while other readings were written relatively recently and offer a more modern perspective on the battle (Beevor, Jones, Cawthorne, Merridale and Roberts). The authors came from a number of different professional backgrounds: commanding officers who took part in the battle (Chuikov, Manstein and Schröter), historians (Beevor, Erickson, Merridale and Roberts), journalists (Grossman) and military writers (Taylor). Reading continued until a saturation level (Bryman, 2008, p. 542) was reached and little new was being learnt about the events that took place during the critical eight-week period between mid-September and mid-November 1942 which is the subject of this paper. While there are some small differences in dates and timing and some differences in description, overall there is a remarkable consistency among authors about the events that took place. The interpretation of these events using a management framework is the object of this paper. I now review the key events that took place during the battle.

### **The battle for Stalingrad**

Operation Barbarossa, one of the longest, toughest and bloodiest campaigns of Second World War and possibly of all time, began on 22 June 1941 when Adolf Hitler ordered the German army across the Polish border and into Russia. Hitler’s view of the Russian army was: “You only have to kick in the door and the whole rotten structure will come crashing down” (Clark, 1995, p. 43). The German strategy of Blitzkrieg was initially extremely successful and led by its Panzer divisions the Germans quickly made ground against a Soviet army severely weakened by Stalin’s purging of over 37,000 officers during the late 1930s. The Germans reached Leningrad on 9 September 1941 and the outskirts

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of Moscow on 19 October 1941. Leningrad was isolated but not taken and German forces at Moscow were halted and then pushed back by Zhukov's counteroffensive on 5 December. Like Napoleon before him, Hitler had underestimated the vastness of the land, the resilience of the Russian soldier and the severity of the winter. In late 1941, during one of the worst winters on record Operation Barbarossa ground to a halt. It left behind 500,000 German soldiers dead and over two million Russian soldiers dead or missing. The frontline extended over 2,000 kilometers from the Baltic to the Black Sea.

To revive his campaign, in the Spring of 1942, Hitler shifted his focus from Moscow in the north to the sprawling industrial city of Stalingrad and the oilfields of the Caucasus in the south. Stalingrad was strategically located on the river Volga, over a kilometer wide, at the tip of its great bend to the west. About 50 kilometers further to the west lay the great bend of the Don river. The isthmus of land between these two enormous river bends controlled access between the great plains of Russia to the north and the Caucasus to the south. The city itself sprawled for 30 kilometers along the western bank of the Volga with ferry crossings connecting the city to the eastern bank of the river. The city was divided into three parts by its two main geographical features: the Mamaev Kurgan hill and the Tsaritsa Gorge. The factory area lay to the north of the Mamaev Kurgan, the downtown area lay between the Mamaev Kurgan and the Tsaritsa Gorge, and the southern suburbs lay to the south of the Tsaritsa Gorge. The city was a major industrial base in Southern Russia and because of the war much of its industry had been switched to military use: for example, the enormous tractor factory now produced tanks for the Russian army.

The battle for the city of Stalingrad itself began in late July 1942 as part of Operation Blue and ended on 2 February 1943 with the surrender of the last remaining German forces in the frozen and ruined city of Stalingrad. This was one of the greatest and most tragic battles in history with over a million casualties and lasting for seven months of fierce and relentless fighting. It marked a turning point in the Second World War: after Stalingrad the strategic initiative passed from Hitler to Stalin – for the following two and a half years German forces were in almost constant retreat with the Red Army ultimately pushing them back to Berlin. What follows is a brief summary of key milestones in the battle but readers seeking more detail can go to one of the many excellent texts written on the battle (Erickson, 2000; Beevor, 1999).

General Friedrich Paulus, Commander of the 6th Army and tasked with taking Stalingrad, was the archetypal German army officer of the time: cerebral, rigid and aloof. He came from relatively ordinary stock and although not of the Junkers class – the Prussian landed gentry that provided much of the German officer corps – he married into the aristocracy. He was a brilliant planner and strategist and had master-minded Operation Barbarossa. He launched his assault on Stalingrad in the hot dusty weather of late Summer 1942. German Panzer troops crossed the river Don and fought their way eastwards across 50 kilometers of steppe reaching the Volga at Spartakova, a northern suburb of Stalingrad, on 23 August 1942 and triumphantly looked across the great river into Asia. German forces had driven over 2,000 kilometers across Russia: it was the highpoint of Hitler's Third Reich and marked the greatest extent of his empire.

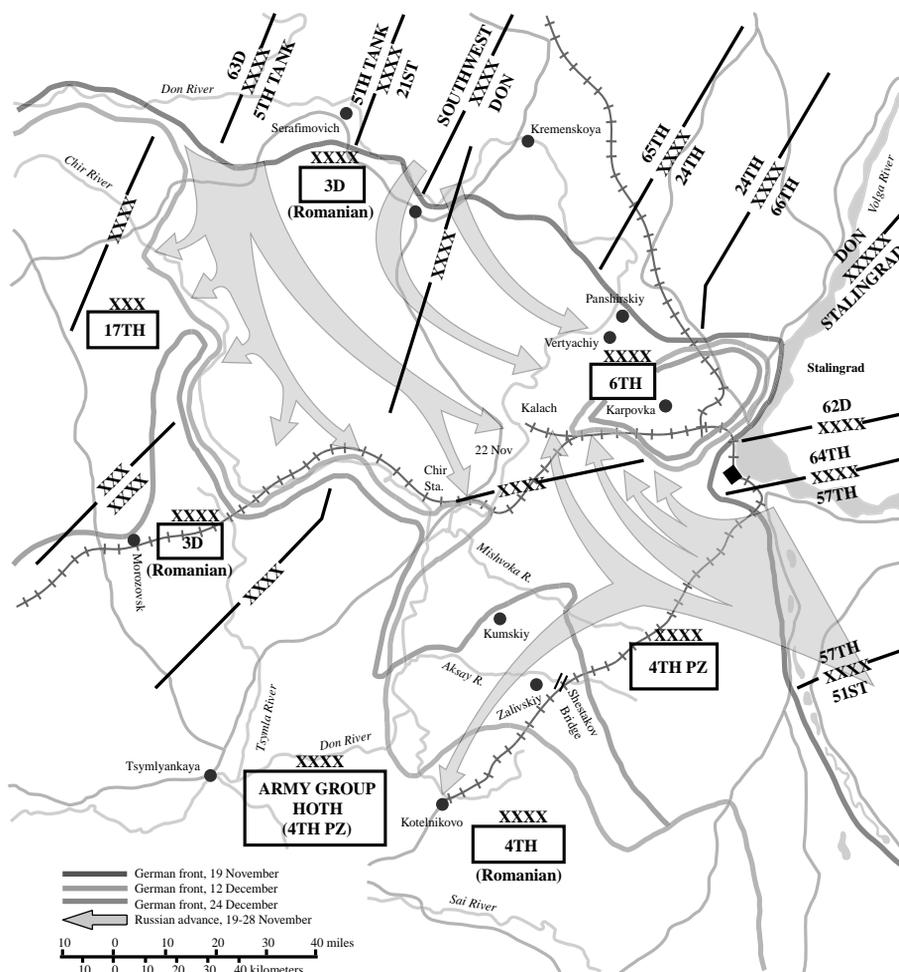
However, Paulus's joy was short lived as he soon found that troops of the Russian 62nd Army, although surrounded, were doggedly defending their city. During the terrifying German bombing raids of 23 and 24 August 1942, the city had been reduced to rubble; German soldiers found every pile of bricks, every damaged sewer and every ruined building resolutely defended by Russian troops. The German forces were gradually

drawn into a war of attrition against dedicated and entrenched defenders. Masters of the Blitzkrieg style of open country mobile warfare, German forces were slow to adapt to the new urban circumstances that they faced in Stalingrad. Many of their traditional advantages – fast-moving Panzer divisions followed by infantry – were nullified by Russian tactics of aggressive defense and close-quarters combat in confined spaces. Panzers could not easily move in the rubble strewn streets, could not elevate their guns to the Russian emplacements in upper stories and in basements and were vulnerable to petrol bomb and anti-tank attack from above. Waves of disciplined infantry divisions broke apart in the confines of the city. Key fortress buildings held by Russians forced German Panzers and troops to divert into nearby streets already ranged in by Russian artillery with spotters in key locations calling in shellfire.

Paulus mounted three major attacks to take the city. His first main assault began on 13 September 1942 directed at the central area of the city. After heavy fighting German troops came within sight of the Volga and poured fire on the central ferry crossings, the lifeline of the defenders. However, Stalin ordered a fresh Guards division across the Volga during that evening and night and these troops immediately began to retake ground ceded during the day. Paulus had lost 10 percent of his army in this attempt to take the city and his attack slowly ground to a halt. He directed his second attack, which began on 14 October 1942, at the crucial factory district in the northern suburbs. A massive “wall of steel” comprising 300 tanks of two Panzer divisions and supported by three infantry divisions bore down on the Tractor factory. After 15 days of unbelievably intense fighting, he had taken the Tractor factory and most of the Barrikady factory but had failed to fully dislodge the defenders who, reinforced with experienced Siberian divisions, were driven back to a small strip of land between 200 and 2,500 meter wide along a 15 kilometers stretch of the Volga. At the end of October, the weather suddenly turned cold and ice floes on the Volga prevented supplies reaching the defenders who were now at their most vulnerable. Paulus launched his third major frontal attack on 11 November 1942 using specialist engineer battalions but “no new tactics were employed” (Schröter, 1958, p. 39). His troops once again reached the Volga at the factory district but the attackers were themselves cut off by Russians who after days of bitter fighting won the territory back.

In September 1942, Stalin and his two Senior Commanders Zhukov and Vasilevsky developed a plan, code named Operation Uranus (Figure 1), to encircle Stalingrad, the German 6th Army and 4th Panzer Army which had been assigned to assist in taking the city. They used the months of October and November, when German troops were tied down in Stalingrad, to mobilize, train and deploy troops for the counteroffensive. Much of this preparation took place at night or under cover and went unnoticed by German intelligence. Over a million Russian troops were deployed along the left bank of the Don to the north of Stalingrad and along the Volga to the south of the city. Operation Uranus began on 19 November 1942 when Russian troops crossed the Don and broke through the weak Rumanian, Italian and Hungarian armies guarding the northern flank of the 6th Army. This attack deep behind the front line caught Army Group B by surprise and the Russians quickly made ground. Two days later, Russian troops broke through the Rumanian Army guarding Paulus’s southern flank and on 23 November 1942 both pincers met at Kalach on the Don: the 6th Army that had laid siege to Stalingrad for four months was now itself encircled.

Field Marshall von Manstein, newly appointed Commander of newly created Army Group Don, sent in a relief force from the southwest but Paulus, under direct orders



Source: [http://en.wikipedia.org/wiki/Battle\\_of\\_Stalingrad](http://en.wikipedia.org/wiki/Battle_of_Stalingrad)

Figure 1.  
Operation Uranus

from Hitler, refused to break out of the encirclement to meet them and the relief force withdrew on 24 December. Goering had assured Hitler that he could supply by air the 500 tonnes daily requirement but this was a vain promise and the beleaguered 6th Army in the encircled pocket received only minimal supplies. The final phase of the battle began on 10 January 1943, when Zhukov launched Operation Ring to annihilate the 6th Army. Inside the *Kessel*, German for “cauldron” and nickname for the isolated pocket in which the beleaguered troops found themselves, were 250,000 German soldiers: starving, frozen, exhausted, covered in lice, disease ridden and with little ammunition to fend off the inevitable Russian attack. However, they remained a formidable fighting force and held out for a further three weeks. They were driven back into the same buildings in the centre of Stalingrad that they had struggled so hard to take four long months before. On 31 January 1943 the Univermag department store containing the 6th Army’s final

headquarters was overrun whereupon Paulus surrendered; two days later in the Tractor factory the last remaining Germans troops surrendered. The Russians took 91,000 prisoners, including 22 generals, of whom only 5,000 are believed to have survived the war.

Surrender at Stalingrad was a body blow to Germany from which it never fully recovered. German generals lost confidence in Hitler's leadership ability. It was also of huge importance to Russia, revitalizing the Russian people and convincing them that they could defeat Germany, which they then went on to do.

### **Paulus: rigid command and control**

Although an experienced staff officer Paulus had little command experience when Hitler appointed him Commander of the 6th Army in early 1942. Several authors suggest that he was unsuited to command: "a reserved man who could methodically present both sides of an argument but had difficulty reaching a decision" (Leach, 1995). Middlebrook (1995) bluntly states:

[...] the man who had commanded a rifle company for two years in peacetime and then, briefly, a battalion but had never commanded any unit in war, was given the direct responsibility for an army of more than a quarter of a million men. It was a fatefully ill-judged appointment.

He depicts Paulus as architect of his own problems at Stalingrad: an ineffective leader, a ditherer who waited until it was too late to break through the encircling Russian troops, and an unimaginative strategic thinker who continued trying the one same flawed strategy.

An example of his indecisiveness at a critical juncture is given by Jones who points out that Paulus kept a fresh division, the 79th Infantry, in reserve for several days during the crucial October 14 battle for the Tractor factory. He states: "Chuikov had feared that the division would be brought forward, knowing that if it was he would almost certainly be overrun. Instead Paulus held back." When Paulus finally committed this division on 17 October Chuikov had been reinforced by a fresh division, Lyudinov's 138th, and the advantage was lost. An officer of the 79th was scathing of Paulus:

An independent change of plan, such as following through after reaching an objective, had been forbidden to the combat troops [...] the momentum of an attack [...] should not be constrained by a fixed battle plan (Jones, 2007, p. 238).

During those critical days, if Paulus had moved from the rigid command and control approach that was his natural style, altering the plan to suit unfolding circumstances and delegating decision-making authority down the line to his frontline commanders, it is very possible that he would have taken Stalingrad and altered the course of the war.

Clark castigates Paulus's inability to improvise and adapt to the situation saying:

[...] while the Russians showed great skill and versatility in adapting their tactics as the battle wore on, Paulus mishandled it from the start. The Germans were baffled by a situation hitherto outside their military experience, and they reacted to it characteristically – by the application of brute force in heavier and heavier doses.

He goes on to say: "as a commander in the field he was slow witted and unimaginative to the point of stupidity" and his 11 November assault was "hopeless" and "misguided" (Clark, 1995, pp. 222, 237, 246). Jukes (1968, p. 154) contrasts the "the flexibility and imaginativeness of the Soviet defence" with the "dull mincing-machine approach" of Paulus. Beevor (1999, p. 228) says:

[...] his real failure as a commander was his failure to prepare to face the threat [to his weak left flank][...] All he needed to do was to withdraw most of his tanks from the wasteful battle in the city to prepare a strong mechanized force ready to react rapidly; instead he kept the tanks in the city: a situation to which they were entirely unsuited.

Paulus was Mintzberg and Waters's (1985) archetypical "planner" sticking rigidly to a pre-planned sequence of actions; by restricting the ability of his commanders to use their own initiative he moved from the German military doctrine of *Auftragstaktik*[1] – mission-oriented command which specifies what to do but not how to do it (von Creveld, 1982, p. 36). Chuikov, polar opposite to Paulus in personality, was "decisive, tenacious and a brilliant improviser on the battlefield" (Craig, 2000, p. 83); in Mintzberg and Waters's typology he was the "entrepreneurial" leader excellent at adapting to emerging circumstances.

According to von Clausewitz (1993, p. 209):

It sounds odd [...] that it takes more strength of will to make an important decision in strategy than in tactics. In the latter, one is carried away by the pressures of the moment, caught up in a maelstrom where resistance would be fatal, and, suppressing incipient scruples, one boldly presses on. In strategy the pace is much slower. There is ample room for apprehensions, one's own and those of others; for premature regrets. In a tactical situation one is able to see at least half the problem with the naked eye, whereas in strategy everything has to be guessed at and presumed. Conviction is therefore weaker. Consequently, most generals, when they ought to act, are paralyzed by unnecessary doubts.

This statement is appropriate for both Paulus and Chuikov. Paulus, the intellectual and strategic planner, was "paralyzed by unnecessary doubts" at vital moments; Chuikov, street fighter and master tactician, was "caught up in a maelstrom" and clung on for dear life. Zhukov's strategic ability – "not just a good planner, he was the best implementer of plans" (Beevor, 1999, p. 222) – powerfully complemented Chuikov's tactical skill on the ground. I next examine Chuikov's key tactical changes.

### **Chuikov: improvisation and development of collective mind**

The vital role played by improvisation in responding to a crisis situation is well illustrated at Stalingrad. General Vasily Chuikov took over command of the 62nd Army on 12 September 1942. Chuikov, born into a large peasant family, spent the early years of the war as a military attaché to China and so was relatively untainted by the Russian defeats on the Eastern Front. Chuikov (1964, p.284) immediately realised that his army would not survive if he adopted conventional tactics:

The most important thing that I learned on the banks of the Volga was to be impatient of blue-prints. We constantly looked for new methods of organising and conducting battle (Chuikov, 1964, p. 284).

He recognized the low spirits of the Russian defenders and set about restoring morale. Russian troops had been overwhelmed by the sweeping advances made by German forces led by their Panzer divisions who out fought and out maneuvered the Russians right across the Ukraine into Russia and on to the Caucasus. Constant retreat across the scorched earth of their homeland had demoralized the Russian soldier. Chuikov instigated a policy of aggressive defense whereby Russian soldiers held firm but also attacked back: "the only way to make the enemy abandon his wild plans was by active defence – to defend by attacking" (Chuikov, 1964, p. 292). He located his headquarters

close to the frontline in contrast to Paulus who was headquartered 60 kilometers away on the far side of the Don and regularly visited troops at the front. He encouraged officers to eat, and therefore share their greater rations, with their troops.

Chuikov (1964, p.146) was a keen observer and a natural improviser. He realised that:

[...] [s]treet fighting is a special kind of fighting. Things are settled here not by strength, but by skill, resourcefulness and swiftness. The buildings in a city are like breakwaters [...] We therefore held on firmly to strong buildings, and established small garrisons in them.

He noted that German troops did not like hand-to-hand combat and avoided fighting at night whereas “[n]ight and night-fighting were natural elements to us” (p. 147) and so he encouraged Russian troops to get close to the enemy and attack at night when Germans were most vulnerable. He noticed that German artillery and fighter planes were reluctant to attack Russians when they were close to German troops for fear of hitting their own men: “It occurred to us, therefore, that we should reduce the no-man’s-land as much as possible – to the throw of a grenade” (p. 84). Chuikov created his frontline defenses in zigzag fashion with the point troops very close to German positions; as well as putting German frontline troops under constant pressure he reduced the risk of German artillery and aircraft bombing Russian troops. His policies of aggressive defense and hugging the enemy put Paulus’s forces under continuous pressure:

At the end of a day [...] we would make an attack, though not always a strong one. But for a weakened enemy even a weak attack was frightening. We kept the enemy in an almost permanent state of strain and fear.

Chuikov observed the “well-thought-out but stereotyped tactics” employed by Paulus and concluded that the way to deal with them centred around:

[...] the individual soldier [...] In street fighting a soldier is on occasion his own general [...] we decided to change our tactics. We were going to break down formations that existed in the army: alongside platoons and sections in our companies and battalions appeared new tactical units – small storm groups (pp. 108-9).

These storm groups were one of Chuikov’s most significant improvisations – small groups of lightly equipped Russian soldiers who attacked a building, often at night, and cleared it of Germans. Use of storm groups was a move away from the traditional approach of organizing men in regiments and battalions and made effective use of his smaller numbers of men[2].

His first use of storm groups was in October 1942 in an impromptu attack in the factory area and was not a complete success. However, Chuikov reviewed the operation and improved the technique. During the fighting of November and December 1942, the storm group technique was perfected as three elements: an initial lightly armed raiding party to take the building, a more heavily armed consolidation party to secure the building and a larger reserve group to hold the captured building against counterattack. Chuikov was to use his perfected storm group tactics in offensive mode three years later during the Russian assault on Berlin.

Storm groups were innovative in two ways: rank became less important and soldiers fought side by side with officers. This raised the morale of his troops as individual soldiers now saw themselves as being as important as the officers, not the norm in the Red Army. The command and control hierarchy also became less important as soldiers

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no longer fought within large-scale units such as battalions and divisions but in small and more autonomous units. Soldiers felt they were more in control of their destiny (in so far as any soldier could be in a situation as horrendous as Stalingrad) and morale improved. According to Chuikov:

The soldier in a storm group must have initiative and boldness, must rely on himself alone and believe in his own powers [...] he is very often left to his own devices, acts alone, on his own responsibility (p. 299).

Although storm groups were autonomous units, Chuikov varied according to circumstances the level of autonomy delegated to storm groups:

It is quite clear, therefore, that the strength, constitution and character of the operations of a storm group are covered by the situation. When a group is operating independently it can be small in numbers and its constitution more homogeneous; in different circumstances it has to work in combination with other groups, carrying out part of a general battle plan (p. 293).

This constant adaptation to circumstances as they unfolded and the careful allocation of autonomy was a key element in Chuikov's success.

Another of Chuikov's key improvisations in the battle was the fostering of sniping activity by Russian troops, against the advice of many of his senior commanders who feared that individuals operating outside the command structure would create control difficulties. Chuikov did not himself initiate sniping activity but he recognized its advantages in the close quarters, no-holds-barred situation of Stalingrad. Many Russian soldiers were hunters in peacetime and had the patience, camouflage skill and accuracy necessary for sniping. The fear of snipers kept German frontline troops constantly on tenterhooks. Support troops bringing food to the front or laying communications cable were especially vulnerable. Sniping was an important element of Chuikov's policy of aggressive defense allowing Russian soldiers take limited offensive action against the Germans and thereby raising Russian morale. It also represented a considerable relaxing of the formal command and control structure as snipers, usually in pairs, operated largely independently of the formal command structure choosing their own positions and targets. Decision making, albeit with restrictions, was delegated downwards allowing frontline troops an increased level of initiative.

Chuikov's defensive techniques had a number of distinct impacts. He nullified German advantages, exploited gaps in German skills, shifted the basis of the battle from Blitzkrieg to a war of attrition that was unsuited to German resources and created a psychological war by dragging out the campaign and making the 6th Army fight for every inch of ground. At the initial stage of the battle, Paulus had several glaring resource advantages over the Russians: air, tank and artillery superiority. Chuikov nullified all of these advantages. He closed up the front line between the two armies counter intuitively forcing his own soldiers closer to the German troops making German aircraft and artillery reluctant to bomb Russian troops for fear of hitting their own men. He made fortresses of individual buildings that broke up the disciplined German infantry divisions. Rubble, mines, buildings, barricades, artillery and attack from above and below were used to disrupt the advance of the Panzer divisions. Chuikov exploited niches where the attackers were less skilled: close-quarters combat, night combat, fighting in houses, buildings and underground. Chuikov fought a battle of attrition customizing Stalin's infamous "not a step back" order to the Stalingrad situation: "there is no land for

us beyond the Volga". Chuikov used snipers to create a besieged mentality among the attackers who felt they were under threat at all times, as indeed they were.

Chuikov's tactics of aggressive defense and hugging the enemy match Webb and Chevreau's (2006) view of improvisation as the carrying out of activities in atypical, non-routine and unexpected ways. Pushing Russian frontline troops closer to the German lines was atypical behaviour, night attacks and hand-to-hand fighting over rooms, corridors, basements and attics was non-routine for German soldiers, shifting from regiments and battalions as the units of warfare to three echelon storm groups was unexpected. These actions had the effect of disrupting German soldiers abilities to "make sense" of the situation that they faced in Stalingrad: the Germans had marched right across Southern Russia and reached the Volga – the battle should have been over; the Russians were meant to be "finished" and capable of little resistance; the 62nd Army was surrounded and should have collapsed as armies usually do when cut-off; Blitzkrieg style warfare which the Germans understood and were excellent at waging was replaced by "rat warfare" which they feared and never mastered. Triumphalism gradually turned to despair and the *Untermensch* philosophy, which regarded Russians as sub-human, was gradually replaced by a belief that Russian endurance was super-human.

Chuikov not only improvised at the level of activity, he also altered structure to fit the particular circumstances of a siege within a city. In the space of a number of weeks in late September and early October 1942, and under extreme duress, Chuikov changed the nature of the command and control approach within the 62nd Army. In this way, he matched Weick's view of improvisation as the rapid substitution of one organizational order for another that is more appropriate. Paulus on the other hand remained rigidly formal in his approach to command and control throughout.

A key factor in the success of Chuikov's improvisations was the development of a "collective mind" among Russian troops. The attrition rate was so high in Stalingrad that the majority of Russian troops defending the city in September were no longer there in October and the November defenders were different again. The collective mind developed at Stalingrad ensured that the improvised techniques and the will to endure were passed on to newly arrived Russian troops. Weick and Roberts (1993) suggest the importance of good narrative skills in developing a collective mind and this was the case at Stalingrad. Stories of heroism passed from soldier to soldier in the relative safety of the Volga embankment at night time. Russian newspaper reporters published the heroic actions of Russian soldiers and created war heroes such as sniper Vasily Zaitsev (whose exploits were later dramatized in the Hollywood movie "Enemy at the Gates"). Russian divisional commanders, most of whom lived through to the end of the battle, were well liked by their men and developed a collective mind and "heedful interaction" through personal example: command headquarters were located close to the front and the personal bravery of Chuikov himself and of the other Russian divisional commanders was well known among the troops; Chuikov himself regularly visited troops on the front line; Lyudinov, whose 138th division was isolated behind the Barrikady factory for five weeks on what came to be known as Lyudinov's island, joined, along with his headquarters staff, in hand-to-hand fighting; "bullet-proof" Batyuk, Commander of the 284th division, led his men to retake the Mamaev Kurgan (Jones, 2007, pp. 243-5). These events quickly became part of the folklore of Stalingrad.

Socialization of newly arrived troops was rapid (as it had to be given the short life of infantry on the front line – often as little as one day). Ongoing socialization of veterans

also occurred and with it an amazing will to endure. The stories of Stalingrad were legion. Many centred around a particular building or location and many individual buildings of Stalingrad entered the folklore: the Grain Elevators, Pavlov's house, the Tractor factory, the House of Nails to name but a few. Other stories centred around individual heroism, for example Panikakha's heroism in throwing his burning body onto a German tank and the exploits of individual snipers who became folk heroes.

Chuikov had a natural skill in turning tacit knowledge into explicit knowledge (Nonaka, 1991). While improvisations such as storm groups and sniper action emerged naturally Chuikov analyzed and codified these activities, improved on them, and clearly articulated them to his troops. For example, his instructions to storm groups were remarkably succinct, graphic and comprehensive (Chuikov, 1964, p. 297). Improvisations thus became transferable, gradually becoming the norm and replacing the old command and control approach among the Russian troops. Rapid dissemination of knowledge through articulation, socialization and internalization (Nonaka, 1991) ensured that techniques as well as stories were passed among the Russian troops and became part of the collective mind of Stalingrad quickly imbuing newcomers to the front with the same attitudes and skills as earlier defenders.

### Discussion

While Chuikov relaxed the command structure and the level of hierarchical control over the 62nd Army at Stalingrad he did so in a limited fashion only: he continued to act as a strong commander throughout the battle and his headquarters remained the main operations and information centre. This form of "constrained improvisation" (Bigley and Roberts, 2001) leading to a judicious mix of command control and delegation of decision-making authority allowed Chuikov's strategy of aggressive defense to be carried out relentlessly for the full duration of the battle and across the entire frontline in the city. German frontline troops felt under constant and ever-increasing threat, and Russian troops correspondingly grew in confidence, as the battle went on. The partial order provided by such a "semistrukture" (Brown and Eisenhardt, 1997) allowed continuity of operations when the formal command and control system broke down, as it did on 14-15 October when Chuikov's headquarters was overrun, or when Russian troops found themselves encircled by German troops as occurred on many occasions and often for extended periods of time. That Russian resistance did not collapse as would be expected in such circumstances further disoriented the advancing German troops. Stalin's "not a step back" directive ensured that the "bottom line" was well understood by all Russian defenders. The NKVD and blocking detachments[3] at the rear ensured that little "freelancing" – improvisation not in line with extant goals – by soldiers occurred (Bigley and Roberts, 2001).

However, it was Chuikov's ability to improvise using whatever resources were to hand and to adapt to the requirements of the situation as it unfolded that was his real strength. Buildings became fortresses against which waves of waves disciplined German infantry broke apart. Paulus's advantage in artillery, aircraft and tanks was nullified by closing up the frontlines and fighting inside buildings and at night. Use of storm groups and snipers made best use of his smaller numbers of troops. Chuikov had an especial ability to recognize opportunities, analyze actions and situations and codify, make explicit, and articulate tacit knowledge thereby rendering it transferable. Paulus on the other hand showed little or no ability to adapt to the situation: he continued

using the same flawed strategy of frontal assault throughout the siege. However, it was Paulus's inability to move from the command and control paradigm that led to his downfall. Ironically, his one deviation from strict command and control principles sealed his fate: during the encirclement, he dealt directly with Hitler rather than going through the formal chain of command, i.e. through Weichs and later Manstein. Hitler's refusal to allow Paulus withdraw from Stalingrad left Paulus with little option but to remain there: breaking out would have put him in the position of disobeying a direct order from Hitler.

While improvisation provided the means to hold the city, developing a collective mind provided the will to endure. Rapid socialization of newly arrived troops and continual resocialisation of veterans generated a collective mind among Russian defenders that "there was no land for [them] beyond the Volga" and that they must hold the city for the sake of "Mother Russia" no matter what the cost. While "collective mind" developed among the Russian troops on the other side of the frontline German troops, used to crushing all before them, found it harder and harder to "make sense" of the situation confronting them in Stalingrad. The Blitzkrieg style of warfare was a complete failure when pitted against a well-defended city. The war became one of attrition, casualty rates rose enormously, and soldiers became demoralized. German soldiers were not used to street fighting, man to man combat, or night fighting; their tanks provided relatively little protection in an urban situation; their aircraft and artillery could not protect them for fear of hitting their own soldiers; they felt under constant threat of snipers; small groups of tough Russian soldiers attacked their strongholds and drove them out; they found themselves fighting women, children and factory workers who should not be capable of holding off the strongest army in the world. While the Russian forces were inferior to the Germans with respect to hard elements – tanks, artillery and aircraft – they proved to be stronger in the softer elements – mind, spirit and the ability to improvise. Soft strengths enabled them to hold out in the short run while in the longer run Stalin and Zhukov built up the hard elements of warfare with which ultimately they were able to launch Operation Uranus to encircle and annihilate the 6th Army.

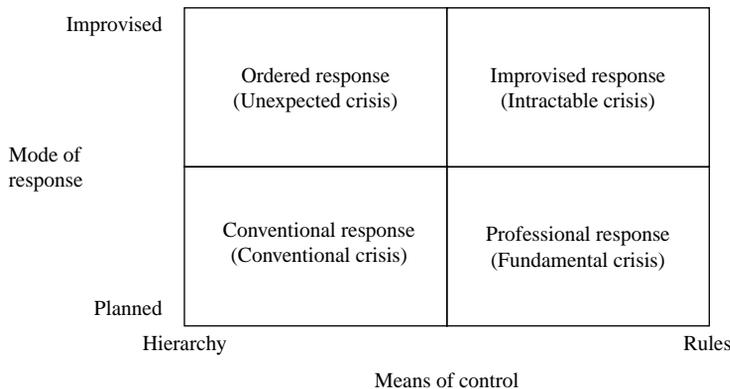
Chuikov's structural and process improvisations fall under Pigeau and McCann's (2002) description of control. His "diligent purposefulness" expressed through his resolute will, and his development of a collective mind "to accomplish the mission", fall under their description of command. Pigeau and McCann also suggest that command is not restricted to senior officers, that "any human [ . . . ] is capable of command" and that any soldier "can creatively express his or her will to accomplish the mission"; Chuikov's ability to engender strong motivation among and provide sufficient opportunity to his troops effectively decentralised command throughout the 62nd Army. The situational constraints – the relatively small physical area to which they were confined, the Volga at their back, and the proximity of Chuikov himself and his generals to the fighting troops – ensured that 62nd Army did not fall into the dilemma identified by Pigeau and McCann: the "unbridled expression of command creativity [that] can quickly lead to organizational chaos".

All three elements – improvisation, relaxing the command and control structure and developing a collective mind – are necessary and are interlinked. Improvisation provides the mechanism by which resources can adapt to the circumstances in which they find themselves. Relaxing the formal hierarchical command and control structure allows front line resources the opportunity to develop and carry out improvised actions, greatly increasing the number of people who are allowed improvise. Without this, improvisation would be restricted to the commanding unit limiting the number of improvisations

that can be made (fewer people can make them) and increasing the time taken for the improvisation to be put into effect (they must be transmitted down the hierarchy) making them more planned than improvised. A collective mind ensures that the adaptation matches the ethos and objectives of the organization and not just the resources themselves; it mitigates against the risk of freelancing behaviour by resources.

Two tentative conclusions of this paper are: in a rapidly evolving crisis situation an increased emphasis on improvisation may be more effective than a response-based solely around formal planning; and a response with an increased emphasis on control by rules (embedded via a collective mind) may be more effective than a response based entirely around control through hierarchy (formal command and control). The paper therefore suggests that two dimensions must be considered when responding to a rapidly evolving crisis situation (Figure 2). The first dimension may be labeled “mode of response” with improvisation and formal planning as its two anchors. The second dimension may be labeled “means of control” and rules (embedded in a collective mind) and hierarchy (command and control) are its two anchors. Together, the mode of the response, planned or improvised, and the means of control, via the formal hierarchy or via rules embedded in a collective mind, determine the speed and the appropriateness of the response. During any particular crisis, organizations must select the point at which to operate along these two dimensions. Chuikov’s development of a collective mind among his troops and his structural changes away from battalions to storm groups shifted his organization towards the rule end of the “means of control” dimension. His use of novel tactics and avoidance of “blueprints” shifted his organization towards the improvisation end of the “mode of response” dimension. These actions ensured that the response of his forces to an ever-changing situation was rapid, locally appropriate and continued even in the absence of central control.

These two dimensions provide a framework for determining possible responses to different crisis situations, not only military but also civil. Four response types are possible: rapid improvised response where control is by rules embedded in collective minds, planned response where control is by hierarchy, planned response where control is by rules and rapid improvised response where control is by hierarchy. It is interesting to superimpose these response types onto Gundel’s (2005) framework of crisis types. The first response type is appropriate for Gundel’s intractable crisis where the situation is predictable but not influencable. This was the situation that the Russian forces were



**Figure 2.**  
Crisis response versus  
crisis type

in during the first phase of the battle: they knew that Stalingrad was going to be attacked but had little influence in preventing this from occurring. This is also the situation that exists in that quintessential arena of improvisation: the jazz group. Musical contributions are often improvised by the players and little hierarchy exists among them; instead control is via an extended socialization process and an intimate knowledge of the rules of the genre (Zack, 2000). I label this type of response “improvised”.

The second response type is appropriate for Gundel’s conventional crisis where the crisis is predictable and the situation is influencable. This was the situation for the Germans at the very beginning of the battle: they knew they were to attack Stalingrad and had a great deal of influence in determining how the battle would unfold; they used conventional tactics of heavy bombardment followed by massive frontal assault. The Russian forces were in a similar situation during Operation Uranus when they encircled the 6th Army and prepared for the final assault. In contrast to the improvised defensive tactics used during the intractable phase, the Russians used the conventional approach of heavy bombardment followed by direct assault during Operation Uranus, which was for them the conventional phase of the battle. While Chuikov, the improviser, was the key Russian Commander during the intractable phase, Zhukov, the planner, took over the key role during the conventional phase. I label this response type “conventional”.

The remaining two response types are not readily explicable by the battle of Stalingrad and so I resort to other situations to discuss these. A rapid, improvised response controlled via the hierarchy may be appropriate in dealing with Gundel’s unexpected crises – crises that are not easily predicted but are influencable. His example of Mann Gulch illustrates this: foreman Dodge’s improvised fire saved his life but the failure of the other firefighters to follow his lead resulted in disaster; stronger hierarchical control coupled with Dodge’s improvisation may have saved their lives. Unexpected crises also occur in the hospital operating theatre where improvisation is often required but control remains strictly via the hierarchy. In such situations, the hierarchy must be in close contact with the front line to ensure swift and appropriate action. I label this response type “ordered”.

The final category is where response is planned but control is via rules embedded in collective minds. The professional firm is a non-crisis example where such response typically occurs; situational responses are usually carefully planned but control is via rules of professional behaviour inculcated into individuals during a long and intensive socialization process (Brady and Walsh, 2008). I label this response type “professional”. Such a response may be appropriate for dealing with what Gundel refers to as fundamental crises. These are crises that are neither easily predictable nor influencable and Gundel gives examples such as major terrorist attacks or the ramifications of gene technology. As mode of response Gundel suggests the setting up of expert groups – a planned rather than improvised approach. While he does not discuss means of control it is likely that some delegation of hierarchical control and increased use of rules embedded in a collective mind would be required to deal with such complex situations; however, this remains a topic for further research.

## Conclusion

This paper makes two main contributions. First, the paper reinterprets a major military-historical event for a management audience, examining in detail the response of two different generals to a rapidly unfolding crisis situation, and showing how one of

the generals, Chuikov, used a judicious mix of planned action and adaptive reaction to win out. The paper argues that improvisation, relaxing the command and control system, and development of a collective mind among Russian defenders were key ingredients in Chuikov's successful defense of Stalingrad. This finding is surprising as it was the German army in Second World War that was generally seen as flexible and the Red Army as rigid but these roles were reversed during the siege of Stalingrad. Rosinski (1966, p. 315) gives some insight into this contradiction: while "the elasticity of its methods" was the "superior asset" of the German army it was "particularly inelastic in its adaptation to new and unforeseen conditions" and when it "came up against a situation requiring radical reconsideration of its basic ideas, as in [...] Russia, the limitation of its approach has made itself fatefully evident". Chuikov, a maverick but natural improviser, proved the more able commander in adapting to the new conditions of urban warfare. The paper provides support for the importance of giving clear direction but without overly constraining the actions of those carrying out the directions, in line with the concepts of *Auftragstaktik*, "minimum critical specification" from socio-technical theory and the "strategic corporal" from current military thinking. The paper also demonstrates that a study of military history can provide useful insights into the nature of strategy and leadership for management researchers and for practicing managers.

Second, the paper makes a formal contribution to the theory of crisis response. The paper suggests that there exist two critical dimensions of crisis response – mode of response and means of control – and identifies two anchor points for each dimension. For the dimension "means of response" the two ends of the continuum are planned response and improvised response. For the dimension "means of control" the two anchors are control via the hierarchical and control by means of rules embedded in the collective mind. The paper puts forward a framework for determining the nature of management response to four different crisis situations. This framework may be useful to theorists but also to practitioners: crisis managers and also to general managers who have to deal with crisis as part of their day-to-day job.

There are some limitations to this research project. First, it deals with a single case study, albeit a very large and complex one, and therefore care must be taken not to over-generalise from this data. Second, the paper deals primarily with Chuikov's defense of Stalingrad. The paper therefore explains how the 6th Army was held at Stalingrad but not how it was defeated. To explain, the latter would require greater study of Operations Uranus and Ring and Zhukov's role in planning and implementing those operations. Hitler's escalating commitment (Staw, 1981, 2002) to the disastrous course of action that was Stalingrad, and groupthink (Chapman, 2006) in the German High Command that allowed him to continue doing so for so long, also played a significant role in the catastrophic loss of the 6th Army that was the first step in the process that led to the downfall of the Third Reich. To fully explain how and why the Red Army annihilated the Germans at Stalingrad would require shifting the analysis out to army group level and to the grand strategies of Operations Blue, Uranus and Ring, a future research project meriting a paper in its own right.

## Notes

1. Under the doctrine of *Auftragstaktik*, a commander defines his intention clearly but restricts the freedom of action of subordinates in carrying out that intention no more than is necessary.

If subordinates come upon a problem in carrying out the intention they put themselves in the shoes of the next higher commander and consider what he would do.

2. Note that the German Army made similar offensive use of storm troops on the Western Front towards the end of First World War (Lupfer, 1981, p. 38) and also during the Second World War offensive against France in 1940. Chuikov's innovation was to use small groups of lightly armed soldiers to storm individual buildings in urban warfare and then to consolidate the gain with more heavily armed troops.
3. Developing a collective mind was carried out through use of both carrot and stick. The blocking forces at the rear were the stick: an estimated 13,000 Russian soldiers were executed on the Stalingrad Front. While Chuikov was undoubtedly a tough disciplinarian Jones (2007, p. 65) suggests that only a proportion of these executions took place in the 62nd Army.

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