



Configurations of human resource practices and battlefield performance: A comparison of two armies

Max Visser*

Radboud University, Institute of Management Research, P.O. Box 9108, 6500 HK Nijmegen, The Netherlands

ARTICLE INFO

Keywords:

High performance human resource practices
Traditional human resource practices
Army organization
Battlefield performance

ABSTRACT

A prominent theme in the HRM literature is the organizational impact of configurations or “bundles” of human resource practices, mostly researched in business firms. A recurrent empirical finding here is that configurations of high performance HR practices generally have a more positive effect on employee attitudes and behavior and on organizational performance than configurations of traditional HR practices. In this paper this research is extended beyond business firms to include army organizations. Specifically it is argued, first, that these two configurations are exemplified in respectively the German Army and the US Army in World War II and second, that these configurations can be reasonably related to a relatively more effective battlefield performance of the German versus the US Army, even in spite of final defeat.

© 2010 Elsevier Inc. All rights reserved.

1. Introduction

The various ways in which organizations configure or “bundle” their human resource practices have important consequences for employee attitudes and behaviors and, through these, for organizational performance. Therefore, in the past two decades practitioners and researchers alike have developed a keen interest in discovering the “best bundle” of HR practices.

In doing so, the empirical research on the relationship between configurations of human resource practices, employee attitudes and behaviors and organizational performance appears to be somewhat one-sided, though. It has tended to concentrate on business firms, using financial indicators as measures of performance (e.g., [Boxall & Macky, 2009](#); [Fiss, 2007](#); [Huselid, 1995](#); [Subramoney, 2009](#)). Research on government and not-for-profit organizations using different sets of indicators has been far less common, although these organizations face comparable HRM questions and challenges. To redress this imbalance, in this paper I propose to study army organizations instead of firms, and to use indicators of combat effectiveness and battlefield performance instead of financial indicators.

Army organizations relatively seldom have been studied by HRM researchers, although there are some exceptions ([Baird, Henderson & Watts, 1997](#); [Cycyota & Ferrante, 2007](#); [Wheatley, 1994](#)). While causes for this neglect may be found in a general academic disinterest in (or even repugnance to), and a stereotypical view of the military, this lack of attention does not seem fully justifiable ([Mutch, 2006](#); [Stokes, 2007](#)). Armies constitute the world's oldest and largest organizations. They represent centuries of experience in selecting, training and managing personnel for arguably the most competitive and turbulent situation any organization may encounter, i.e., actual war. Further, indicators of battlefield performance provide direct evidence on the relative effectiveness of organizations that are quite literally competing with each other, relatively more than financial indicators provide for business firms.

* Tel.: +31 24 3611768; fax: +31 24 3611933.

E-mail address: m.visser@fm.ru.nl.

URL: <http://www.ru.nl/fm/visser>.

A recurrent finding in the literature is that configurations of high performance HR practices generally have a more positive effect on employee attitudes and behavior and on organizational performance than configurations of traditional HR practices (Delaney & Huselid, 1996; Huselid, 1995; Ichniowsky, Shaw & Prenzushi, 1997; MacDuffie, 1995; Macky & Boxall, 2007). In this paper I contend, first, that these two configurations are exemplified in respectively the German Army and the US Army in World War II and, second, that these configurations can be reasonably related to a relatively more effective battlefield performance of the German versus the US Army.

This paper will proceed as follows. In Section 2 I will present a brief review of theory and research on HR configurations and organizational performance. In Section 3 I will present a comparison of German and US army organization during World War II on the basis of a secondary analysis of historical and military sources. Section 4 contains a comparative analysis of US and German battlefield performance, while the paper ends with conclusions and discussion.

2. Human resource configurations and organizational performance

In this paper HRM is defined as the subset of organizational guiding principles (or architecture), policies and practices concerned with employee recruitment, selection, performance appraisal, compensation, participation in decision-making, promotion, training and development (Becker & Gerhart, 1996; Delery, 1998).

In research on HR configurations and performance two approaches may be distinguished. The content approach looks at “the specific set of HRM practices necessary for achieving an organization goal,” while the process approach looks at “the features of an HRM system that send signals to employees that allow them to understand the desired and appropriate responses and form a collective sense of what is expected” (Bowen & Ostroff, 2004, p. 204; Sanders & Looise, 2006). Since both approaches are interrelated, in this paper I will use a broadly defined content approach, concerned with studying the impact of configurations or bundles of HR practices on organizational performance, mediated through their influence on employee attitudes and behavior on the one hand and on organizational structure, allowing for varying degrees of employee participation, on the other (cf. Delaney & Huselid, 1996; Delery & Doty, 1996; Huselid, 1995).

In configurations of HR practices two fundamental parameters may be distinguished: the direction in which practices are configured, and the degree to which practices are configured (Guest, 1997). Regarding direction of configuration, research has been directed at the question whether specific configurations are governed by some particular organization logic (MacDuffie, 1995), workplace philosophy (Kaarsemaker & Poutsma, 2006), or unifying theme (Miller, 1996). Here a general distinction is made between the logics of high performance, high involvement, high commitment or progressive HR practices, following flexible production principles, on the one hand, and traditional HR practices, following mass production principles, on the other (Boxall & Macky, 2009; Delaney & Huselid, 1996; MacDuffie, 1995).

High performance HR practices may be distinguished from traditional HR practices by including three components: (1) structuring the organization in such ways that “skilled and motivated employees are directly involved in determining *what* work is performed and *how* this work gets accomplished,” by employee empowerment and participation systems, team-based production systems, and by providing job security; (2) enhancing employee skills, by improving the quality of new employees through sophisticated selection procedures, and/or by improving the quality of current employees through comprehensive training and development after hiring; and (3) enhancing employee motivation, by implementing merit pay, incentive compensation and performance management systems, and by protecting them from arbitrary treatment (Delaney & Huselid, 1996, p. 951; Bae, Chen, Wan, Lawler & Walumbwa, 2003; Huselid, 1995; Ichniowsky et al., 1997; MacDuffie, 1995).

Empirical evidence suggests that configurations of high performance HR practices generally have a more positive effect on employee attitudes and behavior and on various subjective and objective indicators of organizational performance than configurations of traditional HR practices (Colombo, Delmastro & Rabbiosi, 2007; Delaney & Huselid, 1996; Huselid, 1995; Ichniowsky et al., 1997; MacDuffie, 1995; Macky & Boxall, 2007; Subramoney, 2009).

Regarding degree of configuration, research has been directed at the question whether the effect of HR practices on organizational performance is stronger, the more closely they are configured, regardless of direction. It is acknowledged that HR practices may have additive, substitutable, positive synergistic and negative synergistic relationships, where the latter two are also known as “powerful connections” and “deadly combinations” (Becker, Huselid, Pickus & Spratt, 1997; Delery, 1998; Macky & Boxall, 2007). Empirical evidence is mixed, however, mostly reporting modest to small effects of degrees of configuration (Delaney & Huselid, 1996; Delery & Doty, 1996; Huselid, 1995). Problems in empirical measurement and assessment of degrees of configuration are likely to have influenced these results (Becker & Gerhart, 1996; Chadwick, 2010; Fiss, 2007). Given these problems and the nature of the data in this paper, degrees of configuration will not be further considered here.

3. Comparing HR configurations: the German and US armies in World War II

When comparing army organizations in terms of HR practices, I contend that two fairly contrasting cases stand out from the historical and military literature, the German Army and the US Army (Dupuy, 1984; Hart, 2001; Van Creveld, 1983). The former concentrated more on fighting power superiority, based on principles of flexibility and adaptability and geared at maximum operational effectiveness. Accordingly, its HR practices were configured in a rather high performance direction. The latter concentrated more on material and technological superiority, based on principles of management and optimization and geared at maximum organizational efficiency. Accordingly, its HR practices were configured in a rather traditional direction.

In the remainder of this section this contention will be substantiated with regard to the three components, discussed in Section 2, on the basis of a secondary analysis of historical and military sources. These sources were repeatedly searched from February 2005 to June 2009 through search engines PiCarta, Web of Science, Google Scholar, and Google, using the search terms “army organization,” “US Army,” “German Army,” “army performance” alone and in various combinations. References in the sources found were further checked for relevance and suitability for the purpose of this paper.

3.1. Structuring the organization: army doctrine, organization and decision-making

The doctrine of war of the *German Army* traditionally was directed at overwhelming the enemy through superior fighting power, rather than through numerical and material superiority. The geographical position of Prussia (later Germany) as a relatively small state, with few natural resources and surrounded by powerful (potential) enemies, led to an operational conception of war. An emphasis was laid on maneuver, surprise and improvisation to ensure a quick and decisive destruction of the enemy's command and control capability. In line with this, the army encouraged individual initiative, independent thinking and responsibility at all levels of command. The friction, uncertainty and complexity, inherent in the “fog of war,” were accepted as given. As a rule, German officers did not attempt to contain this “fog” by detailed orders from the top down (“Befehlstaktik”), but by providing broad missions to their lower commanders (“Auftragstaktik”). They assigned them the tasks to be accomplished and left them as much room as possible in determining how they should accomplish these tasks. However, in the course of World War II Hitler, as supreme commander of the armed forces, tended to resort to “Befehlstaktik” again (Frieser, 2005; Gudmundsson, 1993; Uhle-Wettler, 1993; Von Lossow, 1977).

In its internal organization, the German Army concentrated on combat effectiveness, rather than administrative efficiency. It was divided into a Field Army, responsible for all military operations, and a Replacement Army, responsible for training, replacements, procurement, and administration. Both branches were organized on the basis of regional defense districts, with the purpose of bringing men, non-commissioned officers (NCOs) and officers together from the same region, thus promoting social homogeneity. Both branches also maintained close connections, through rotation of officers and personnel, frequent visits and close personal ties between officers (Van Creveld, 1983; Wilson, 1989).

The General Staff of the German Army played an important role at the higher levels of command. In the spirit of Napoleon, this Staff and its equivalents at army, corps and division levels functioned as small, well-trained, integrated support units of commanders, emphasizing execution over detailed planning that, in the words of Von Moltke, “would not survive the first contact with the enemy” (Boothe, 2005, p. 76). Staff units were very reluctant to place administrative burdens on the troops in the field, relying on global ten days reports on strength and losses instead of detailed daily reports. Staffs at all echelons remained well-informed and closely connected to one another, though, because officers rotated continuously between the General Staff and senior field command positions (Dupuy, 1984; Hughes, 1986; Van Creveld, 1983).

An important role of the General Staff was the rigorous and objective analysis of victory and defeat on the basis of after action reports (“Erfahrungsberichte”) from lower units. The General Staff as a rule demanded that these “Erfahrungsberichte” be as critical, honest and accurate as possible. In general lower commanders were not afraid to issue reports in this spirit, indicating high levels of trust and honesty between echelons. The General Staff used the results of analysis for the continuous improvement of doctrine and tactics and their translation in training programs, which it developed in close collaboration with the Replacement Army (Hart, 2001; Murray, 1981; Visser, 2007, 2008).

The doctrine of war of the *US Army* traditionally was directed at overwhelming the enemy through numerical and material superiority, rather than through superior fighting power. The geographical position of the USA as a large continent, rich in natural resources and surrounded by friendly or neutral states, led to a managerial conception of war. An emphasis was laid on central organization, planning and logistics to ensure an optimal deployment of material and men in an overwhelming force. This feature was reinforced by the fact that after Pear Harbor the army had to be largely rebuilt in a short period of time, which was only possible through centralized steering and decision-making. As a rule, US officers attempted to contain the “fog of war” more by detailed orders from the top down than by encouraging independent actions of their lower commanders. A notable exception was General Patton, who early on developed his own version of “Auftragstaktik” (Hart, 2001; Leonhard, 1993; Van Creveld, 1983, 1985).

In its internal organization, the US Army concentrated on administrative efficiency, rather than combat effectiveness. It was divided in Army Ground Forces (AGFs), responsible for training, and Army Service Forces (ASFs), responsible for replacements. After World War I the army had abandoned regional affiliation for the draft of field units and since then it organized the units according to uniform Tables of Organization and Equipment (TO&E). Both branches did not maintain much contact; ties between training and combat units remained remote and impersonal throughout the war (Hart, 2001; Van Creveld, 1983).

The US Army possessed a uniform organization for all land and air operations, the War Department General Staff. This Staff and its equivalents at army, corps and division levels combined command of war with general administration, emphasizing planning through detailed operational orders over execution. Staffs used sophisticated mathematical methods and technology to assess strengths and losses, for which they relied on detailed daily reports from the troops in the field. No systematic rotation of officers between staff and senior field command positions was maintained, since officers were randomly transferred to whatever vacancies occurred in the army (Boothe, 2005; Van Creveld, 1983).

Although the War Department General Staff followed developments at the front, it played no central role in collecting and disseminating after action reviews. However, before entering World War II, in September and November 1941 the US Army had conducted the large-scale Louisiana and Carolina maneuvers to approach combat conditions as close as possible. The results of

these maneuvers were thoroughly and frankly evaluated and used to improve doctrine and intensify training. After entering the war, the army further improved its operations through both formal and informal learning from combat experience and through its ability to improvise and retrain itself under field conditions. Although hampered by deficiencies in the army's training and replacement practices, discussed below, this gradual improvement of doctrine and operations did lead to increasing battlefield effectiveness of the US Army in later stages of World War II (Hart, 2001; Heginbotham, 2000; Wheatley, 1994).

3.2. *Enhancing employee skills: selection and training of men*

In the *German Army* men were selected, trained and organized in ways that enhanced unit cohesion and morale, rather than organizational efficiency. The selection of recruits occurred in local centers by a physician and a selection officer, who also carried on a brief conversation with every recruit to arrive at a personal judgment of the character of the man involved. The admission of men to specific army branches was based on physical condition, education, previous occupation and expressed wishes. The final decision here rested with their future regimental commanders, who in this way were responsible for both training the men and for leading them into battle. Recruits received their mainly tactical and practical basic training of about 12–21 weeks in the Replacement Army, often by instructors with recent combat experience. After this they were transferred to the Field Replacement Battalions ("Feldersatzbattallione") of their future Field Army division for advanced training (Hart, 2001; Van Creveld, 1983; Wilson, 1989).

Replacements were mainly used to set up new divisions, rather than to bring existing divisions up to strength. This practice turned divisions into cohesive, tightly knit units with considerable fighting power, until cohesion gains were offset by the depletion of men and officers due to war attrition. Further, this practice made rotation of divisions in and out the line possible to the very end of World War II. Rotation involved a few weeks of refreshment, rearmament, recovery and rest, which were quite important for morale (Shils & Janowitz, 1948; Van Creveld, 1983).

Replacements reached their divisions in 1000 men strong, armed and self-sustained marching battalions ("Marschbattallione"), led by officers of the receiving division. Upon arrival, the men and their officers were dispersed over the three companies of a "Feldersatzbattallion," which were closely tied to the division's three regiments. Recovered men and officers traveled back to their last field unit in the same "Marschbattallione," which in this way were instrumental in integrating old and new men and officers. Recovered soldiers, though small in numbers, were particularly welcomed by their units, since these veterans were important for group cohesion and front atmosphere (Kershaw, 1990; Shils & Janowitz, 1948; Van Creveld, 1983).

In the *US Army* men were selected, trained and organized in ways that enhanced organizational efficiency, rather than unit cohesion and morale. The selection of recruits occurred in an assembly line manner, with different physicians each examining different bodily parts and at the end a psychiatrist rapidly firing short questions of the "do you like girls" type (Van Creveld, 1983, p. 69). The most skilled and talented draftees went to the Air Force, ASF, and the airborne troops, while the AGF received the remainder. Of these, recruits possessing a skill or trade were as much as possible assigned to a similar military job, leaving the regular infantry with the relatively least educated, skilled and physically fit personnel. Recruits received their basic training of about 13–17 weeks in Army Training Centers in the US, in which only after the Normandy invasion officers with recent combat experience became training instructors. Since US divisions had no equivalent of "Feldersatzbattallione," replacements were expected to receive their advanced training from veterans (Hart, 2001; Van Creveld, 1983).

The army employed a fixed number of 91 divisions, and replacements were used to keep these divisions continually up to strength. While this system was both flexible and efficient, the steady influx of "green" newcomers had a negative impact on unit cohesion, morale, and combat effectiveness. Further, this practice, combined with the relatively low number of divisions and a shortage of shipping space, made rotation of divisions in and out the line both impossible and unnecessary. The consequence of all this was that soldiers continuously had to face combat pressures without the prospect of some rest and recovery, until they either became casualties, or found other ways to escape these pressures (Ambrose, 1992; Hart, 2001; Van Creveld, 1983).

After their basic training, replacements traveled individually to replacement depots, then to overseas theater depots, and from there often directly to their divisions, a move taking 4–5 months. US divisions had no equivalent of a marching battalion, and the men were simply distributed among the units. Officers were similarly randomly distributed to vacancies in combat units. Recovered men entered the replacement system just like everybody else and for administrative reasons seldom returned to their own units. This randomly herding of men and officers between depots and units had a very negative effect on morale and unit cohesion: "Perhaps more than any other factor, it was this system that was responsible for the weaknesses displayed by the US Army during WWII" (Van Creveld, 1983, p. 79; Graham & Bidwell, 1986; Hart, 2001).

3.3. *Enhancing employee skills: selection and training of officers and non-commissioned officers (NCOs)*

In the *German Army* officers were selected on the basis of character, rather than intelligence, and trained towards decisive combat leadership. The selection of officers, their admission to officer training and their commission rested with the regimental commanders of the men involved. Only in 1942 a central screening bureau was instituted for officer testing, but the other decisions remained at the regimental level. Officers were primarily selected on the basis of character and will power, more than intelligence or education. Psychological tests, examinations and personal evaluations played a main role in the selection process. Formal training lasted between 9 and 16 months, in which tactics and operations were emphasized, while strategy, logistics and organization were relatively neglected. As the war proceeded, active front service increasingly came to be regarded as the best training of aspiring officers, including those NCOs who showed leadership and initiative in front of the enemy. Promotion to higher

ranks primarily occurred on the basis of personal evaluations of character, competence and the ability to generate trust under front-line conditions, increasingly more than seniority or General Staff training (Dupuy, 1984; Knox, 2000; Van Creveld, 1983).

Although in the course of the war a shortage of officers developed, the German Army in general did not compromise on their quality, preferring competent junior or no officers over incompetent ones. Thus, in 1944 hundreds of battalions were commanded by majors, captains or even 1st lieutenants. In their behavior, officers were expected to show responsibility, independent action and quick decision-making, while remaining within the framework of the mission of their senior commanders. They should lead from up front, issuing their own mission orders on the basis of first-hand knowledge of the situation. Unlike the Allied armies, officers were expected to live with their men and allowed to fraternize with them when off duty. At the same time they were expected to enforce strict discipline, thus combining attitudes of sternness and benevolence. In general both officers and senior NCOs, at least up to battalion level, were highly regarded by their men (Antal, 1993; Frieser, 2005; Kershaw, 1990; Shils & Janowitz, 1948).

The closer units were to the front lines, the more officers they contained. Thus, in 1944 officers made up 3.0% of the Field Army and 2.4% of the Replacement Army. Inside an infantry division they formed 3.3% of the strength of combat elements and 1.9% of service and replacement elements. Probably as a consequence, German officers' chances of being killed were almost twice as high as those of soldiers and NCOs, while their chances of becoming wounded were about the same. Only seldom could officers be found among the missing in action. The same figures hold for casualties among officers from accidents, suicide and illness, which may be indicative of the great strain on officers (Van Creveld, 1983).

The selection of NCOs and their admission rested with the company or battery commanders of the men involved, acting on General Staff guidelines. Selection again occurred mainly on the basis of character and will power. Aspiring NCOs received two years of training in special battalions by regimental officers and senior NCOs, leading to a strong "esprit de corps" among them. The avenue to and from NCO-ship was relatively open, with one in six men being promoted to NCO and many NCOs becoming officers, eleven of them even attaining the rank of general. Due to a shortage of men, however, NCO selection and training requirements had relaxed noticeably by the end of 1944 (Rush, 1999; Shils & Janowitz, 1948; Van Creveld, 1983).

In the US Army officers were selected on the basis of intelligence, rather than character, and trained towards efficient management under pressure. The testing and selection of officers were split between psychological bureaus and the commanders of officer candidate schools. In practice the results of the Army General Classification Test were decisive on who became an officer and who not, meaning that intelligence ranked first and character second. Formal training lasted between 7 and 9 months, in which planning, logistics and organization were emphasized, while tactics and operations were relatively neglected. Active front service played no role in officer selection and training. Upon completing training and being commissioned, the new officer entered a pool to be assigned to wherever a vacancy occurred in one of the US Army's 91 divisions overseas, according to the TO&E. Promotion to higher ranks was based on selection, but only after a surplus of commissioned personnel was built up by the end of 1943 proved it to be possible to replace incompetent officers (Hart, 2001; Van Creveld, 1983).

Due to this surplus of commissioned personnel, officer casualties easily could be replaced during the war. However, since the replacements often carried higher ranks than the officers they replaced, the whole system had a double negative impact on morale. Not only were the men in combat units deprived of a chance of promotion, the newly arriving officers were also placed below the positions to which they were entitled by rank. In their behavior, officers were expected to be knowledgeable and loyal to their superiors, while less emphasis was put on independent action. Although officers were forbidden to fraternize with their men, they were expected to show them just treatment, rather than enforce strict discipline. Probably as a result of all these factors, a large majority of all US enlisted men thought that officers put their own interests above that of their men (Ambrose, 1992; Shils & Janowitz, 1948; Van Creveld, 1983).

The farther away units were from the front lines, the more officers they contained. In 1944 officers made up 9.6% of Army strength, ranging from 3.5% and 5.0% in rifle companies and infantry regiments to 9.1% in the Zone of Interior, and still more in the ASF. Probably as a consequence, the more casualties a unit took in, the less officers it contained. Officers in AGF units had about the same chance of becoming a casualty as soldiers and NCOs, but the more numerous officers in ASF units faced far higher probabilities of survival (Van Creveld, 1983).

The selection and admission of NCOs mainly occurred on the basis of seniority or ability. Schooling was provided for NCOs with technical skills, but not for leadership skills, which should be attained in practice. No "esprit de corps" existed among NCOs. The avenue to NCO-ship was very open: in 1945 no less than 50% of all enlisted men were NCOs, which, together with the replacement system, created frictions among the troops. At the same time, the hurdle from NCO to officer commission was considerable (Van Creveld, 1983).

3.4. Enhancing employee motivation: personnel administration

The German Army's personnel administration was geared towards rewarding good combat performance, rather than administrative efficiency. Leave was more readily granted to front-line troops, veterans and married men, equitable across ranks. It was systematically used as a reward of brave deeds by men in particular. In such cases it was immediately granted, with an endorsement by the army commander. Decorations were awarded for independent action and bravery, with higher requirements for officers than for men. They were cumulative, rewarding repeated acts of bravery. Decisions on higher decorations were taken by Hitler personally, on recommendation of the direct superior and corps or army commander, often within 2 to 5 weeks and surrounded by broad military media coverage. Military justice was harsh and often draconian, with 11,753 men executed for desertion and undermining morale, which probably led to relatively low desertion rates. Men were as well protected against their

officers as the other way round. The harsh system was given a “human face” by the veterans and by relative lenience on private transgressions, like drunkenness and women in the barracks (Kershaw, 1990; Shils & Janowitz, 1948; Van Creveld, 1983; Wilson, 1989).

The US Army's personnel administration was geared towards administrative efficiency, rather than rewarding good combat performance. Leave was more readily granted to officers than men. It was centrally administered and granted, so that even divisional commanders could not use it as a tool for leadership. Decorations were awarded for meritorious service in non-combat duties, rather than for independent action in combat, which feature favored officers over men. Decorations were not interconnected and not cumulative. The average waiting time for the higher classes of decoration was between 5 and 6 months. Military justice was lax and lenient, with 70 men executed, almost all for civilian offenses. Probably as a consequence, desertion rates in the US Army were much higher than those in the German Army. Military regulations did not explicitly protect men against officers. The system reflected the essentially “civilian” nature of the US Army in this period (Graham & Bidwell, 1986; Van Creveld, 1983).

4. German and US battlefield performance

In order to assess relative battlefield performance, it is important to find engagements in World War II that permit a more or less fair comparison between German and US Army units without too many confounding influences of Allied air and naval superiority, Allied and Axis political developments, and the relative lack of combat experience of US troops, who entered the Western theater only in the beginning of 1943.

For several reasons, the Italian campaign between September 1943 and June 1944 suggests itself. First, it affords a comparison of German and US Army performance at a time and place in which Allied naval and air superiority did not yet have a decisive impact on ground operations. To be sure, the initial landing at and securing of the Salerno beach head was decisively aided by Allied naval and air bombing, but in later engagements the rugged mountainous terrain and adverse weather conditions made Allied naval and air support much more difficult (Graham & Bidwell, 1986). Second, it affords such a comparison at a time that the German Army, although badly mauled at Stalingrad (December 1942), did not yet experience the profound consequences for its morale and leadership of the Normandy invasion (June 6, 1944) and the attempted assassination of Hitler (July 20, 1944) (Wilmot, 1952). Third, it affords an assessment of the development of battlefield performance of the US Army over 9 months of intense fighting, after its first harsh encounters with the German Army in North Africa in early 1943 (Dupuy, 1985; Graham & Bidwell, 1986; Hart, 2001).

The Italian campaign has been intensively researched by Dupuy, a retired US Army colonel and military historian. Dupuy and his team developed the Quantified Judgment Model, the most elaborate account of battlefield performance factors to date (Dupuy, 1985, 1986). This Model involves the identification and quantification of 73 variables, pertaining to weapons, terrain, weather, season, air superiority, posture, mobility, vulnerability, tactical air effects and intangible factors such as leadership and morale. While not uncontested (e.g., Brown, 1986, 1987; Geldenhuys & Botha, 1994), the QJM in general has stood up well under criticism (Dupuy, 1986, 1987; Nutter, 2004).

Dupuy developed the QJM on the basis of 60 division-size engagements in the US Fifth Army zone in Italy between September 1943 and June 1944. He selected this particular zone because both ground and air operations were constricted to a well-defined operational area between the Tyrrhenian Sea and the Apennines, which permitted a better comparison of forces than would be possible in less strictly defined areas (Dupuy, 1985). Since the Fifth Army zone involved the commitment of US as well as British and Commonwealth divisions, out of Dupuy's original 60 engagements I have selected those 32 that only involved US divisions. Table 1 contains the various campaigns, engagements, US and German units, and other necessary data (based on Dupuy, 1985, pp. 234–235). A priori it can be seen that seven US and 13 German divisions were involved in these engagements, in which the US divisions enjoyed an average numerical superiority of about 80% over their German counterparts.

Dupuy developed two measures to analyze engagements in the Italian campaign. The first measure, Combat Effectiveness Value (CEV), is concerned with the ratio of relative combat outcomes and combat power. In a formula it is defined as: $CEV = (R_g/R_a)(P_g/P_a)$, whereby $CEV_g = 1/CEV_a$ and vice versa (Dupuy, 1986).

In this formula the second part, P , represents combat power, which in its turn is defined as: $P = S \times V$. Here S represents force strength, a quantification of the lethality of all weapons used (subdivided into infantry, artillery, armor, and air support weapons) into an Operational Lethality Index, modified for the effects of environmental variables (like weather, terrain and season) on the effectiveness of each weapon. Further, V represents the variables affecting the employment of the force under the circumstances existing at the time of the engagement. These variables include tangible factors like posture, terrain, weather, mobility and vulnerability, and intangible factors like leadership, training, experience, morale and logistics. Calculating P values for the German and Allied sides in the engagements results in P_g/P_a ratios, reflecting the theoretical outcome of an engagement (Dupuy, 1985, 1986).

The first part of the CEV formula, R , represents result. The actual outcomes of engagements are defined by three sub measures: mission accomplishment (the extent to which opposing sides succeed in achieving its assigned or perceived goals); spatial effectiveness (gaining or holding ground in terms of miles gained or withdrawn in an engagement), and casualty effectiveness (the number of daily inflicted casualties, controlled for the size of the opposing sides). Calculating R values for the German and Allied sides in the engagements results in R_g/R_a ratios, reflecting the actual outcome of an engagement (Dupuy, 1985, 1986).

Applying this CEV formula to the 32 engagements between US and German forces (Table 1), the average CEV_g of 1.30 (or corresponding CEV_a of 0.77) seems to indicate that on the whole the Germans were about 30% more combat effective than the US

Table 1

Selected engagements US–German troops, Italy 1943–1944.

Nr.	Engagement	US div.	N_a	German div.	N_g	CEV_a	SE_a	SE_g
<i>Salerno Campaign, September 9–18, 1943</i>								
D3	Sele–Calore corridor, Sep.11	45 I	12,447	16 Pz	8390	0.80	1.12	2.45
D6	Tobacco factory, Sep.13–14	45 I	12,691	16/29 Pz	14,733	0.45	1.96	2.51
D9	Eboli, Sep. 17–18	45 I	15,576	16/26 Pz	6702	0.68	0.96	2.44
<i>Volturno Campaign, October 12–December 8, 1943</i>								
D12	Triflisco, Oct.13–14	3 I	18,476	HG Pz	7250	0.83	0.75	2.50
D13	Monte Acero, Oct. 13–14	45 I	21,265	3 PzGr/26 Pz	6435	0.60	1.26	1.22
D14	Caiazzo, Oct.13–14	34 I	18,210	3 PzGr	6435	0.52	0.58	1.66
D16	Dragoni, Oct.15–17	34 I	17,034	3 PzGr	5152	0.85	0.89	1.33
D21	Santa Maria Oliveto, Nov.4–5	34 I	16,870	3 PzGr	6321	0.49	1.28	3.28
D23	Monte Lungo, Nov.6–7	3 I	16,600	3 PzGr	6566	0.52	1.34	2.82
D24	Pozzili, Nov. 6–7	45 I	20,116	3 PzGr	6566	0.87	0.54	1.59
D26	Monte Rotondo, Nov.8–10	3 I	16,350	3 PzGr	7942	0.51	0.66	1.36
D29	Monte Maggiore, Dec.2–3	36 I	5551	15 PzGr/29 Pz	3288	0.67	0.59	1.82
<i>Anzio Campaign, January 22–February 29, 1944</i>								
D35	Moletta River defense, Feb.7–9	45 I	5000	65 I	7418	0.39	1.40	1.33
D37	Factory counterattack, Feb.11–12	45 I	13,400	715 LtI	7077	0.65	1.77	1.50
D38	Bowling alley, Feb.16–19	45 I	20,496	4 Divs	41,974	0.83	1.88	1.26
D40	Fiocchia, Feb.21–23	45 I	19,613	114 LtI	15,637	0.36	0.78	1.28
<i>Rome Campaign, May 11–June 4, 1944</i>								
D41	Santa Maria Infante, May 12–13	88 I	18,702	94/71 I	9250	1.42	3.09	2.33
D42	San Martino, May 12–13	85 I	17,970	94 I	8141	0.57	2.62	4.46
D43	Spigno, May 14–15	88 I	18,308	94/71 I	8215	2.00	2.89	1.95
D44	Castellonorato, May 14–15	85 I	16,458	94 I	7500	0.67	1.98	3.04
D45	Formia, May 16–18	85 I	23,190	94 I	7627	0.45	2.06	2.77
D46	Monte Grande, May 17–19	88 I	13,095	94 I	4563	0.71	2.10	2.33
D47	Itri-Fondi, May 20–22	88 I	17,912	94 I	6653	0.42	1.50	3.14
D48	Terracina, May 22–24	85 I	18,030	94 I	6653	0.28	1.64	4.34
D51	Anzio Breakout, May 23–25	1 A	16,215	3 PzGr/362 I	12,815	0.74	2.04	1.74
D52	Cisterna, May 23–25	3 I	19,971	362 I	11,928	1.01	2.48	2.94
D53	Sezze, May 25–27	85 I	17,925	29 Pz	6957	2.18	1.43	1.47
D54	Velletri, May 26	1 A	14,620	362 I	12,327	0.92	3.84	3.54
D55	Campoleone station, May 26–28	45 I	19,047	65 I	10,593	0.78	2.34	1.76
D56	Villa Crocetta, May 27–28	34 I	18,000	3 PzGr	13,715	0.98	2.29	1.45
D58	Lanuvio, May 29–June 1	34 I	17,300	3 PzGr	6108	0.62	1.97	2.24
D59	Campoleone, May 29–31	1 A/45 I	29,711	3 PzGr/65 I	15,801	0.83	2.02	2.16
32		7 div's	17,067	13 div's	9585	0.77 (1.30)	1.69	2.25
			1.79:		1		1:	1.33
							0.75:	1

Italics = attacking. I = infantry. A = armored. a = US. g = German. Pz = panzer. Gr = grenadier. Lt = light.

forces facing them. However, as Table 2 indicates, the US forces showed signs of development and adaptation during the 9 months under consideration. In the Salerno and Volturna campaigns (September to December 1943) the average CEV_g of 1.54 (or corresponding CEV_a of 0.65) appears to show the relative inexperience of the partly newly formed US divisions facing mainly battle-hardened Germans (Graham & Bidwell, 1986). In the Anzio and Rome campaigns (January to June 1944), the average CEV_g dwindles to 1.19 (with a corresponding CEV_a of 0.84), though, indicating a clear improvement in battlefield effectiveness of the US

Table 2

Development battlefield performance over campaigns, 1943–1944.

Campaigns	N_a/N_g	$CEV_{a(g)}$	SE_a	SE_g
Salerno and Volturna (Sept.–Dec. 1943, 12 engagements)	2.21:1	0.65 (1.54)	0.99 1: 0.48:	2.08 2.09 1
Anzio and Rome (Jan.–June 1944, 20 engagements)	1.61:1	0.84 (1.19)	2.11 1: 0.90:	2.35 1.12 1
Average	1.79:1	0.77 (1.30)	1.69 1: 0.75:	2.25 1.33 1

troops. This development coincides with a decrease in average numerical superiority of US over German forces from 121 to 61%, providing further indication of US troops learning to fight more effectively.

The second measure, Score Effectiveness Value (SEV), is not concerned with outcomes and weapons. Instead it counts the number of men and the daily number of casualties (killed, wounded, missing) on both sides of an engagement, from which a score is calculated, i.e. the average number of casualties inflicted on the enemy by blocks of 100 men on each side. The Score Effectiveness is calculated by dividing the score by a constant, the value of which depends on a number of interacting factors, of which posture (attack, delaying resistance, hasty defense, prepared defense, fortified defense) is the most important (Dupuy, 1985).

As an example, a typical average engagement in World War II has the following division of forces (Dupuy, 1986, pp. 206–207):

Army	N	Posture	# Casualties/day	% cas/day
German	10,000	Defense	250	2,5
Allied	20,000	Attack	400	2,0
AL Score Effect (SE _a): GE cas/AL N 250/20,000 × 100 = 1.25				
GE Score Effect (SE _g): AL cas/GE N 400/10,000 × 100 = 4.0/2.0 = 2.0				

During most of World War II the Allied forces were the attacking party and the Germans delaying or defending. Because of the advantages of a defensive posture, the German score is divided by a constant of 2.0, yielding a German Score Effect (SE_g) of 2.0. The Score Effectiveness Value of German versus Allied troops (SEV_g) then is 2.0:1.25, or 1.6:1 (the corresponding SEV_a is the reverse, namely 1.25:2.0, or 0.63:1).

Applying this SEV formula to the 32 engagements between US and German forces in Italy (Table 1), the average SEV_g of 1.33:1 (or corresponding SEV_a of 0.75:1) seems to indicate that on a man for man basis the German troops inflicted casualties at an average 33% higher rate than they incurred from the opposing US troops. However, as Table 2 indicates, on this measure the US forces showed signs of development and adaptation as well during the 9 months under consideration. While in the Salerno and Volturna campaigns the average SEV_g is 2.09 (with a corresponding SEV_a of 0.48), in the Anzio and Rome campaigns the average SEV_g has dropped to 1.12 (with a corresponding SEV_a of 0.90), providing another indication of clear improvement in battlefield effectiveness of the US troops.

5. Discussion and conclusions

In this paper it has been argued that in the German Army in World War II HR practices were configured in a rather high performance direction. Put succinctly, this army's doctrine of war concentrated on fighting power superiority, based on principles of flexibility and adaptability and geared at maximum operational effectiveness. It emphasized the need for decentralized decision-making to adapt to the "fog of war." Its internal organization concentrated on combat effectiveness and delegated supporting functions to the rear. It selected, trained and organized its men in ways that enhanced unit cohesion and morale. It selected its officers and NCOs primarily on the basis of character and trained them towards decisive combat leadership. Its system of personnel administration was geared towards rewarding good combat performance.

In contrast, in the US Army HR practices were configured in a rather traditional direction. Put succinctly, this army's doctrine of war concentrated on material and technological superiority, based on principles of management and optimization and geared at maximum organizational efficiency. It emphasized the need for centralized decision-making to adapt to the "fog of war." Its internal organization concentrated on administrative efficiency and uniform organization. It selected, trained and organized its men in ways that enhanced organizational efficiency. It selected its officers and NCOs primarily on the basis of intelligence and trained them towards efficient management under pressure. Its system of personnel administration was geared towards administrative efficiency.

The differences in HR configurations between both armies could be reasonably related to battlefield performance, with the German Army rather consistently outperforming the US Army, even in spite of its final defeat.

These results are in line with a growing body of empirical evidence on the positive effects of configurations of high performance HR practices on employee attitudes and behavior and on organizational performance vis-à-vis configurations of traditional HR practices (Bae et al., 2003; Colombo et al., 2007; Delaney & Huselid, 1996; Huselid, 1995; Ichniowski et al., 1997; MacDuffie, 1995; Macky & Boxall, 2007). Moreover, these results were obtained among a different category of organizations than the usually researched business firms, using a different set of performance indicators than the usual financial ones (Boxall & Macky, 2009; Fiss, 2007; Huselid, 1995; Subramoney, 2009). Finally, these results were partially obtained through historical case research, different from the usual sample surveys, allowing for a deeper probing of the alignment of a system of HR practices with an organization's unique business problems or operating initiatives (Becker & Gerhart, 1996).

However, some qualifying comments are in order here, since other factors have played a role as well in determining performance. For example, a factor favoring the Germans was geographical proximity, with the US troops being forced to fight on remote battlefields and the German forces increasingly fighting relatively close to home, in defense of their fatherland (Kershaw, 1990). Another factor favoring the Germans was the political factor, with the Allied forces consisting of multiple nations with concomitant political complications and the German forces being led by one man, at least in principle (Beaumont, 1986). This was particularly true for the Italian campaign, which was subject to rather intense inter-Allied strive and disagreement, while Hitler

lend his commander-in-chief in Italy, Kesselring, a relatively free hand (Graham & Bidwell, 1986; Wilmot, 1952). However, from the Normandy invasion onward inter-Allied cooperation greatly improved, while Hitler's increasing resort to "Befehlstaktik" and micro-management became *de facto* liabilities for the German Army (Millett, Murray & Watman, 1986; Wilmot, 1952). Finally, a factor favoring the US pertained to equipment and material. While in a qualitative sense there was a rough parity between the German and US armies (e.g., Dupuy, 1985; Hart, 2001), in a quantitative sense the US Army almost always enjoyed a considerable material advantage, as the data of Dupuy (1985) attest. Although, in the light of these other factors, the impact of HR configurations on battlefield performance ultimately may not be established beyond a reasonable doubt, it is not unreasonable to assume that without their specific HR practices the German Army would have collapsed much earlier in World War II.

The course of both armies after World War II seems instructive of the influence of different HR practices on attitudes and performance. After 1945 the US Army further organized itself on the basis of principles of scientific management, a movement that reached its pinnacle in the Vietnam War. During that war the army's battlefield performance was seriously impaired by its preoccupation with management and efficiency rather than fighting power, its emphasis on officers performing administrative and procurement duties instead of leading front-line units, its rotation system of men and officers that actively discouraged morale and unit cohesion, and its divide between men and officers that lead to mutiny and officers being killed by their own men (Savage & Gabriel, 1976; Van Creveld, 1985). In the years after Vietnam, the US Army reorganized itself and actively came to embrace the principles of "Auftragstaktik." In (HR) practice, however, tendencies toward detailed command and control, an emphasis on organizational efficiency and high levels of trust in material technology to accomplish victory in combat remained clearly discernible (Boothe, 2005; Dunivan, 2003; Leonhard, 1993).

After 1945 the German Army went through a period of denazification and then, in the face of a growing Soviet threat and the beginning of the Cold War, gradually was being incorporated into the NATO command structure. It retained its command and control principles of "Auftragstaktik" and combined these with moral principles of "Innere Führung" (inner leadership), to avoid future authoritarian attitudes and excesses (Von Lossow, 1977; Widder, 2002). Through retired officers and veterans several principles of army organization and HR practices gradually found their way into German industrial companies. In this way these principles were partially instrumental in bringing about the rapid postwar economic recovery of Germany (the "Wirtschaftswunder") to become the world's third largest economy today, next to the US and Japan (Glunk, Wilderom & Ogilvie, 1996; Sorge, 2005).

Acknowledgments

I thank Chris Brewster, John Delery, Robert Kok, Erik Poutsma, Roel Schouteten, Arndt Sorge, Stefan Zagelmeyer, and the associate editor and two reviewers for their stimulating and critical remarks on earlier drafts of this paper. An earlier version of the paper was presented at a research seminar on "HRM configurations and performance," Radboud University, Nijmegen, The Netherlands, June 9, 2009.

References

- Ambrose, S. E. (1992). *Band of brothers: E company, 506th regiment, 101st Airborne from Normandy to Hitler's Eagle's nest*. New York: Simon & Schuster.
- Antal, J. F. (1993). The Wehrmacht approach to maneuver warfare command and control. In R. D. Hooker (Ed.), *Maneuver warfare: An anthology* (pp. 347–359). Novato CA: Presidio.
- Bae, J., Chen, S., Wan, T., Lawler, J. J., & Walumbwa, F. O. (2003). Human resource strategy and firm performance in Pacific rim countries. *International Journal of Human Resource Management*, 14(8), 1308–1332.
- Baird, L., Henderson, J. C., & Watts, S. (1997). Learning from action: An analysis of the Center for Army Lessons Learned (CALL). *Human Resource Management*, 36(4), 385–395.
- Beaumont, R. A. (1986). On the Wehrmacht mystique. *Military Review*, 66(7), 44–56.
- Becker, B. E., & Gerhart, B. (1996). The impact of human resource management on organizational performance: Progress and prospects. *Academy of Management Journal*, 39(4), 779–801.
- Becker, B. E., Huselid, M. A., Pickus, P. S., & Spratt, M. F. (1997). HR as a source of shareholder value: Research and recommendations. *Human Resource Management*, 36(1), 39–47.
- Boothe, L. L. (2005). OPORDs and leadership: Complicating simplicity. *Military Review*, 85(5), 75–79.
- Bowen, D. E., & Ostroff, C. (2004). Understanding HRM-firm performance linkages: The role of the "strength" of the HRM system. *Academy of Management Review*, 29(2), 203–221.
- Boxall, P., & Macky, K. (2009). Research and theory on high-performance work systems: Progressing the high-involvement stream. *Human Resource Management Journal*, 19(1), 3–23.
- Brown, J. S. (1986). Colonel Trevor N. Dupuy and the mythos of Wehrmacht superiority: A reconsideration. *Military Affairs*, 50(1), 16–20.
- Brown, J. S. (1987). The Wehrmacht mythos revisited: A challenge for Colonel Trevor N. Dupuy. *Military Affairs*, 51(3), 146–147.
- Chadwick, C. (2010). Theoretic insights on the nature of performance synergies in human resource systems: Toward greater precision. *Human Resource Management Review*, 20(1), 85–101.
- Colombo, M. G., Delmastro, M., & Rabbiosi, L. (2007). "High performance" work practices, decentralization, and profitability: Evidence from panel data. *Industrial and Corporate Change*, 16(6), 1037–1067.
- Cycyota, C. S., & Ferrante, C. J. (2007). Guest editors' note: Human resources and leadership lessons from the military. *Human Resource Management*, 46(1), 1–4.
- Delaney, J. T., & Huselid, M. A. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal*, 39(4), 949–969.
- Delery, J. E. (1998). Issues of fit in strategic human resource management: Implications for research. *Human Resource Management Review*, 8(3), 289–309.
- Delery, J. E., & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, 39(4), 802–835.
- Dunivan, J. (2003). C2 on the digitized battlefield: Surrendering the initiative? *Military Review*, 83(5), 2–10.
- Dupuy, T. N. (1984). *A genius for war: The German army and General Staff, 1807–1945*. Fairfax, VA: Hero.
- Dupuy, T. N. (1985). *Numbers, predictions & war: The use of history to evaluate and predict the outcome of armed conflict*, Rev. ed. Fairfax, VA: Hero.

- Dupuy, T. N. (1986). Mythos or verity? The quantified judgment model and German combat effectiveness. *Military Affairs*, 50(4), 204–210.
- Dupuy, T. N. (1987). A response to “The Wehrmacht mythos revisited.” *Military Affairs*, 51(4), 196–197.
- Fiss, P. C. (2007). A set-theoretic approach to organizational configurations. *Academy of Management Review*, 32(4), 1180–1198.
- Frieser, K.-H. (2005). *The blitzkrieg legend: The 1940 campaign in the West*. Annapolis, MD: Naval Institute Press.
- Geldenhuis, G., & Botha, E. (1994). A note on Dupuy’s QJM and new square law. *Orion*, 10(1/2), 45–55.
- Glunk, U., Wilderom, C., & Ogilvie, R. (1996). Finding the key to German-style management. *International Studies of Management & Organization*, 26(3), 93–108.
- Graham, D., & Bidwell, S. (1986). *Tug of war: The battle for Italy, 1943–1945*. London: Hodder & Stoughton.
- Gudmundsson, B. I. (1993). Maneuver warfare: The German tradition. In R. D. Hooker (Ed.), *Maneuver warfare: An anthology* (pp. 273–293). Novato CA: Presidio.
- Guest, D. E. (1997). Human resource management and performance: A review and a research agenda. *International Journal of Human Resource Management*, 8(3), 263–276.
- Hart, R. A. (2001). *Clash of arms: How the allies won in Normandy*. Boulder, CO.: Lynne Rieger.
- Heginbotham, E. (2000). Military learning. *Military Review*, 80(3), 88–94.
- Hughes, D. J. (1986). Abuses of German military history. *Military Review*, 66(12), 66–76.
- Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38(3), 635–672.
- Ichniowski, C., Shaw, K., & Prennushi, G. (1997). The effects of human resource management practices on productivity: A study of steel finishing lines. *American Economic Review*, 87(3), 291–313.
- Kaarsemaker, E. C. A., & Poutsma, E. (2006). The fit of employee ownership with other human resource management practices: Theoretical and empirical suggestions regarding the existence of an ownership high-performance work system. *Economic and Industrial Democracy*, 27(4), 669–685.
- Kershaw, R. J. (1990). *It never snows in September: The German view of Market Garden and the battle of Arnhem*. Marlborough: Crowood.
- Knox, M. (2000). 1 October 1942: Adolf Hitler, Wehrmacht officer policy, and social revolution. *Historical Journal*, 43(3), 801–825.
- Leonhard, R. R. (1993). Maneuver warfare and the United States Army. In R. D. Hooker (Ed.), *Maneuver warfare: An anthology* (pp. 42–56). Novato CA: Presidio.
- MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review*, 48(2), 197–220.
- Macky, K., & Boxall, P. (2007). The relationship between “high-performance work practices” and employee attitudes: An investigation of additive and interaction effects. *International Journal of Human Resource Management*, 18(4), 537–567.
- Miller, D. (1996). Configurations revisited. *Strategic Management Journal*, 17(7), 505–512.
- Millett, A. R., Murray, W., & Watman, K. H. (1986). The effectiveness of military organizations. *International Security*, 11(1), 37–71.
- Murray, W. (1981). The German response to victory in Poland: A case study in professionalism. *Armed Forces & Society*, 7(2), 285–298.
- Mutch, A. (2006). Organization theory and military metaphor: Time for a reappraisal? *Organization*, 13(6), 751–769.
- Nutter, T. E. (2004). *Mythos revisited: American historians and German fighting power in WWII*. www.MilitaryHistoryOnline.com, accessed January 28, 2010.
- Rush, R. S. (1999). A different perspective: Cohesion, morale and operational effectiveness in the German Army, Fall 1944. *Armed Forces & Society*, 25(3), 477–508.
- Sanders, K., & Loiose, J. K. (2006). The value of HRM?! Optimizing the architecture of HRM. *Management Review*, 17(3), 219–222.
- Savage, P. L., & Gabriel, R. A. (1976). Cohesion and disintegration in the American Army: An alternative perspective. *Armed Forces & Society*, 2(3), 340–376.
- Shils, E. A., & Janowitz, M. (1948). Cohesion and disintegration in the Wehrmacht in World War II. *Public Opinion Quarterly*, 12(2), 280–315.
- Sorge, A. (2005). *The global and the local: Understanding the dialectics of business systems*. Oxford: Oxford University Press.
- Stokes, P. (2007). The “militarizing” of organization and management studies: Reconnoitering the tensions – problems and possibilities for reshaping the terrain? *Critical Perspectives on International Business*, 3(1), 11–26.
- Subramoney, M. (2009). A meta-analytic investigation of the relationship between HRM bundles and firm performance. *Human Resource Management*, 48(5), 745–768.
- Uhle-Wettler, F. (1993). Auftragstaktik: Mission orders and the German experience. In R. D. Hooker (Ed.), *Maneuver warfare: An anthology* (pp. 236–247). Novato CA: Presidio.
- Van Creveld, M. (1983). *Fighting power: German and US Army performance, 1939–1945*. London: Arms & Armor.
- Van Creveld, M. (1985). *Command in war*. Cambridge, MA: Harvard University Press.
- Visser, M. (2007). Deutero-learning in organizations: A review and a reformulation. *Academy of Management Review*, 32(2), 659–667.
- Visser, M. (2008). Learning under conditions of hierarchy and discipline: The case of the German Army, 1939–1940. *Learning Inquiry*, 2(2), 127–137.
- Von Losow, W. (1977). Mission-type tactics versus order-type tactics. *Military Review*, 57(6), 87–91.
- Wheatley, M. J. (1994). Can the US Army become a learning organization? *Journal for Quality and Participation*, 17(2), 50–55.
- Widder, W. (2002). Auftragstaktik and Innere Führung: Trademarks of German leadership. *Military Review*, 82(5), 3–9.
- Wilmot, C. (1952). *The struggle for Europe*. London: Collins.
- Wilson, J. Q. (1989). *Bureaucracy: What government agencies do and why they do it*. New York: Basic Books.

Max Visser (Ph.D, University of Twente) is an assistant professor at Nijmegen School of Management, Radboud University, The Netherlands.