

# The Effects of Firm Strategy on the Level and Structure of Executive Compensation

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## **Abstract**

*Executive compensation has attracted considerable attention over the past few decades. However, a review of the literature suggests a need for more empirical research using different theoretical insights. In this paper, using several theoretical perspectives, we add new insights on the determinants of executive compensation. Using data from a sample of Canadian-based mining firms, we examine and discuss the effects of firm strategy on the level and structure of chief executive officer compensation. Areas for future research are also discussed.*

## **Résumé**

*Les dernières décennies ont vu un très grand nombre de recherches dans le domaine de la rémunération des cadres d'entreprise. Toutefois, la révision des ouvrages publiés révèle la nécessité de nouvelles recherches empiriques utilisant des approches théoriques différentes. À l'aide de diverses approches théoriques nous présentons ici de nouvelles idées sur les déterminants de la rémunération des cadres. Employant les données tirées d'un échantillon d'entreprises minières canadiennes, nous examinons les effets de la stratégie des entreprises sur l'échelle de rémunération et le niveau de salaire des directeurs généraux. Nous discutons aussi des aspects susceptibles de devenir les sujets de recherches futures.*

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What makes money so fascinating a subject, after all, is the magnificent lack of justice with which it gets distributed. Salaries constitute comedy as the dictionary defines it: instances of "incongruity," "exaggeration carried to the point of the ridiculous.... Money in terms of being "deserved" or even "earned," is a treacherous subject. Zeus is known to have turned himself into a shower of gold, and probably this is the safest way to think of money – as a kind of meteorological accident which falls, like other sorts of rain, upon the just and unjust. (Maddocks, 1979, pp. 1-2)

Although the above quote was used some 20 years ago to describe the situation concerning highly paid stars such as "Morris and other fat cats", it appears to describe equally well the current scene relating to executive com-

pensation. Data on compensation paid to executives of publicly held companies are published annually in the United States and Canada. Following publication of these data, it is not uncommon to see headlines in the popular press screaming about the staggering levels of executive pay and the ensuing discussion and commentaries suggesting executive compensation to be more the result of a "comedy" or "meteorological accident" than a systematic and logical process.

Executive compensation also appears to be a treacherous subject to research. Numerous researchers in the U.S. have investigated firm size and firm performance as potential determinants of executive compensation, leading to a voluminous body of literature on the subject (for excellent reviews of this literature, see Gomez-Mejia, 1994; Gomez-Mejia, Paulin, & Grabke, 1995; Gomez-Mejia & Wiseman, 1997). Although of recent origin, Canadian studies of executive compensation too have focussed on the same two potential explanatory variables (Magnan, St-Onge, & Thorne, 1995; McGuire & Dow, 1998; Zhou, 2000). However, this line of research has not proven to be very productive. A relatively recent review of literature concluded that: "it is amazing how

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little we know about executive pay in spite of the massive volume of empirical work available on this topic" (Gomez-Mejia, 1994, p. 201). There is still need for additional insights and new perspectives from which potential determinants of executive compensation should be investigated.

In recent years, a number of studies emanating from the strategic management/business policy discipline have begun to explore the effects of an organization's strategy on executive compensation (see, for example, Balkin & Gomez-Mejia, 1990; Rajagopalan & Finkelstein, 1992; Veliyath, Ferris, & Ramaswamy, 1994). These studies posit that different organizations tend to use different strategies and, therefore, may use varying criteria that are consistent with their respective strategies to compensate their executives. While this line of enquiry appears to be promising, only a few well designed studies have empirically tested the underlying thesis (e.g., Balkin & Gomez-Mejia, 1990; Murthy & Salter, 1975). Three aspects of these studies should be noted.

First, the primary focus of the studies has been on the effects of organizational strategy on the level but not the structure of executive compensation (such as salary and other short-term components of compensation versus stock-based/long-term components), which has become considerably important in recent times. As a recent overview stated, "the authors of much of the recent literature on compensation recognize that firm strategy may influence *pay design*. However, there has been very little empirical research on how organizational strategy affects CEO pay" (Barkema & Gomez-Mejia, 1998, p. 139, emphasis added).

Second, almost all of the studies on executive compensation analyze U.S.-based companies and data. As Barkema and Gomez-Mejia (1998) note, "previous empirical research has overwhelmingly used U.S. data sources. However, data on other countries represent a rich, virtually untapped source of increased understanding of what determines executive pay ... we believe such international research is a particularly exciting avenue for further research" (pp. 142-143). While globalization and free trade agreements are linking countries economically closer together, significant differences may still remain among them to cause cross-national variations in executive compensation practices and policies. For example, it is true that extensive economic (e.g., trade) and institutional (corporate and labour unions) linkages exist between Canada and the United States. Still the two countries have significant differences on many factors that, a priori, would suggest variations in executive compensation practices. These factors include corporate governance and ownership structures, role of institutional investors,

and size as well as industrial mix of firms (McGuire & Dow, 1998; Zhou, 2000).

Third, only two studies have utilized the well established Miles and Snow (1978) typology to classify firms according to their respective strategy in examining the relationship between firm strategy and executive compensation (Rajagopalan & Finkelstein, 1992; Veliyath et al., 1994). Even these studies base their analyses on samples of under 50 firms.

The present study integrates the traditional and the more contemporary lines of research on executive compensation and adds new perspectives on the issues. In doing so, it addresses the gaps in the literature as noted above. The primary objective of the present study is to examine the effects of firm strategy on not only the level but also the structure of executive compensation, while simultaneously taking into account the traditionally investigated variables such as firm size and firm performance.<sup>1</sup> The study is based on data from a relatively large sample of Canadian firms and, to the best knowledge of the authors, is the first on the effects of firm strategy on executive compensation outside the United States. Thus, it can help guide generalizations of results based on samples of U.S.-based firms. Finally, the study also utilizes the Miles and Snow typology for classifying firms according to their strategy, thus providing a more systematic analysis of the relationship between firm strategy and executive compensation.

## Theoretical Background and Hypotheses

### *The Strategic Archetypes*

One of the major premises of the Miles and Snow (1978) typology is that identifiable strategic orientations exist within an industry. Using this framework, a firm can be classified as a *prospector*, *defender*, *analyzer*, or *reactor*. These strategic orientations reflect a firm's adaptation to the challenges/problems in the organization's entrepreneurial, engineering, and administrative domains.

The key dimension underlying the Miles and Snow typology is the rate at which an organization changes its products or markets/geographic areas of operation. *Prospectors* usually pioneer product and market/geographic development, and tend to explore opportunities the most intensively. They compete primarily by stimulating and meeting new opportunities. *Defenders* are at the other end of the spectrum. They engage in little or no new product or market/geographic development and often control relatively secure niches within their industries the most intensively. Such organizations compete primarily on the basis of price, quality, or service. *Ana-*

lyzers are an intermediate type. They make fewer and slower market or product changes than do prospectors, and are less committed to stability and efficiency than are defenders. Finally, *reactors* do not seem to follow a conscious strategy and are viewed as a dysfunctional organizational type (Hambrick, 1983; Miles & Snow, 1978; Snow & Hrebiniak, 1980; Zahra & Pearce, 1990).

### *Theory, Research Evidence and Hypotheses*

*The organizational strategy-executive compensation relationship.* This relationship may be explained from a *contingency theory* perspective. The concept of congruency or "fit", a central notion of contingency theory, is based on the notion that an organization's strategy can be decomposed into its elements (such as technology, marketing, compensation), which are important in their individual roles as well as their roles in overall strategic plans (Balkin & Gomez-Mejia, 1990; Venkatraman & Camillus, 1984). Because strategic synergy among the elements is an implied objective of an organization, an important normative test for a firm's strategy is internal consistency (Galbraith & Schendel, 1983; Porter, 1980). It means that if functional strategies, such as employee compensation, are not integrated or congruent with the overall strategy, the organization may have an unclear strategic direction, leading to suboptimal or even dysfunctional outcomes (Balkin & Gomez-Mejia, 1990). The same underlying logic may be applied to executive compensation as well. From a contingency theory perspective, it is implied that executive compensation strategies are more likely to be effective if they are contingent on the overall strategy of the organization, other things being equal (Milkovich, 1988). That is, executive compensation should be dependent on organizational strategy.

A number of empirical studies have examined how organizational strategy acts as a determinant of executive compensation. For instance, Balkin and Gomez-Mejia (1990) and Rose and Shepard (1997) found that a firm's strategy, judged by the extent and types of diversification activities, influenced executive compensation. Other studies found that organizational and product life cycles (Balkin & Gomez-Mejia, 1987), and "industry type" (e.g., Deckop, 1988; Eaton & Rosen, 1983; Rajagopalan & Prescott, 1990; Raviv, 1985), both closely related to organizational strategy, influenced executive compensation.

In the two executive compensation-related studies that used the Miles and Snow (1978) typology (Rajagopalan & Finkelstein, 1992; Veliyath et al., 1994), it was found that prospector firms generally paid their executives more than defender firms. Rajagopalan and Finkelstein (1992) investigated the effects of strategic

orientation (and environmental change) on senior management reward systems in 50 U.S. electric utility firms. Firms were classified into Miles and Snow's (1978) strategic archetypes using cluster analysis. Veliyath et al. (1994) conducted their research on a sample of 46 publicly traded U.S. drug and pharmaceutical firms; these firms were classified into strategic types using cluster analysis as well.

The authors of the studies cited above posit that higher pay for CEOs in prospector firms may be a reflection of greater employment risks faced by these managers. That is, as Rajagopalan and Finkelstein (1992) argue, "a firm's strategy and its environment create conditions that affect both monitoring costs and managerial risk, which can be reduced by adopting appropriate compensations systems" (p. 128). Accordingly, CEOs in prospector firms, relative to their counterparts in defenders, will be paid at higher levels for working in a more uncertain environment requiring greater monitoring and information processing. Along similar lines, as Gray and Cannella (1997) argue, unlike shareholders, executives cannot diversify their risk because of their close association with a firm. Executives face a variety of risks, or uncertainty about outcomes, and their careers and incomes may be at stake. Thus, they seek greater pay to work in riskier environments. The incentive component of CEO compensation packages may also be higher in defender firms because of greater suitability of these to the strategic direction of such firms. This was found to be the case in Boyd and Salamin (2001). Although this study looked at compensation rewards of managers in general, it found that the highest bonus levels were at the top of the hierarchy, and in divisions with a strong strategic change orientation.

Further, in one study that examined structural aspects of executive compensation (Rajagopalan, 1997), it was found that long-term/stock incentives had a stronger positive performance effect among prospectors than among defenders. Thus, one might expect that stock options would be used more heavily by prospectors than defenders, which would be reflected in relatively higher stock-based pay for CEOs of these firms. Gaver and Gaver (1995) also found that executives of growth firms (similar to prospectors) received a larger portion of their compensation from long-term incentives (mainly stock-based compensation), while those of non-growth firms (similar to defenders) received a larger portion of their pay from fixed salary.

It is obvious that stock-based compensation will result in CEOs acquiring part ownership of their firms over time. Some studies have investigated the effect of inside ownership of the firm on its corporate entrepreneurship behaviour, such as investment in research and development aimed at product innovation and/or pursuit

of new market opportunities. The evidence from these studies is mixed. For example, while Zahra (1996) found that equity ownership by executives was positively associated with corporate entrepreneurship behaviours, Wright, Ferris, Sarin, and Awasthi (1996) found this to be true only at low levels of such ownership. The latter finding suggests that firms with a growth oriented strategy may limit the extent to which executive compensation is sensitive to firm performance to keep the interests of their executives aligned with those of the shareholders (Grossman & Hoskisson, 1998; Zazac & Westphal, 1994). This may be a less important concern to Canadian firms as their performance was found to be less sensitive to ownership and incentive pressures than U.S. firms (McGuire & Dow, 1998). Although empirical analysis of the effects of executive ownership of firms on corporate entrepreneurship behaviour may be interesting and potentially useful, it falls beyond the scope of the present study.

Accordingly, based on the above discussion, the present study hypothesizes that:

H1a: Chief Executive Officers in prospector firms will earn more than their counterparts in the other strategic type, in terms of fixed compensation, short-term incentives, long-term incentives, and total compensation.

H1b: Chief Executive Officers in prospectors will earn proportionately more in long-term incentives than their counterparts in other strategic types.

H1c: Firm strategy will add incrementally to the effects of size, performance, and tenure in explaining the level of CEO compensation in terms of total compensation and individual compensation components.

*The organizational performance-executive compensation relationship.* This relationship has also been widely researched, mainly from an *agency theory* perspective. Agency theory, in recognizing the control problems that may arise between top executives and owners, emphasizes that contingent compensation contracts for managers that link pay to performance can align the interests of executives and shareholders (Fama, 1980; Fama & Jensen, 1983; Jensen & Meckling, 1976). Accordingly, firm performance can be expected to be a key indicator of executive compensation.

The evidence on the firm performance-executive compensation relationship has been mixed. While some studies have reported a positive relationship between the two variables, others have found that the relationship is not significant, and yet others have reported a negative relationship (for comprehensive reviews of the literature,

see Gomez-Mejia, 1994; Gomez-Mejia et al., 1995). The Canadian studies (Magnan et al., 1995; Zhou, 2000) indicate similar findings as well. The mixed empirical evidence on the relationship between executive compensation and firm performance, especially the negative results, have fuelled considerable criticism from various stakeholders (employees, shareholders, the general public, the press, etc.). Such pressures, in part, have led to the enactment of legislation (such as the amendments to the *Ontario Securities Act, 1993*) requiring public companies to disclose relevant information on executive compensation. Such legislation seems to be achieving the desired effect, viz., bringing executive compensation in line with organizational performance, at least in Canada (see, for example, Mayers, 1996).

More consistent findings on executive compensation-firm performance have emerged from studies that focus not on the levels of executive compensation but on the type/structure of executive compensation (e.g., short-term and long-term elements of executive compensation packages), and examine relationship to specific measures of firm performance as appropriate (Grossman & Hoskisson, 1998). Some scholars suggest that accounting and market-based performance measures may have different impacts on the structural components of executive compensation (e.g., Barkema & Gomez-Mejia, 1998; Rajagopalan, 1997). Accounting-based rates of return emphasize short-term, usually annual, firm performance and, therefore, should have greater impact on short-term components of executive compensation. In contrast, market-based measures of firm performance emphasize long-term, strategic objectives and, thus, should be more closely related to long-term components of executive compensation.

Based on the above, it is hypothesized that:

H2a: Short-term CEO compensation (fixed and incentives) will be better predicted by accounting-based performance measures than by market-based performance measures.

H2b: Long-term incentives will be better predicted by market-based performance measures than by accounting-based performance measures.

## Methodology

### *Population and Samples*

The population consisted of all publicly traded metal-mining firms in Ontario (n = 416); however, the study was restricted to the compensation of Chief Executive Officers (CEOs) of firms listed on the Toronto



Stock Exchange (TSE):  $n = 102$ . Company presidents were used when there were no named CEOs (the term "CEOs" is used throughout the paper instead of "CEOs/Presidents"; "Chairmen" were not included unless they were also the CEOs of the firm). Ontario-based firms on the TSE were used because access to data from these firms was made relatively easy as a result of changes in the *Ontario Securities Act, 1993*; these changes have made the executive compensation disclosure rules similar to Securities Exchange Commission (SEC) regulations in the United States. As in previous studies of a similar nature, subsidiaries of other companies and foreign-based firms were excluded (see for example, Thomas, Litschert, & Ramaswamy, 1991; Veliyath et al., 1994). Subsidiaries were excluded since it was unclear whether they were in control of strategic decisions. Foreign-based firms were excluded because they may be operating in legal, social, political, and economic environments quite different from Canada. Further, the focus of the study is on Canadian-based firms.

It was also important to select firms characterized by a primary business activity or one main organizational strategy (that is, where business efforts are concentrated on a single product or a related group of products) since highly diversified firms may have different strategies for different products/services. Thus, metal mining firms (Standard Industrial Classification system, Group 10) were selected. This industry is also the most heavily represented on the TSE, thus offering the best opportunity for robust statistical analyses. Further, examining a particular industry will control for any industry effects/external factors on executive compensation strategy (Raviv, 1985). This is essential since compensation systems may vary across industries as a reflection of varying degrees of profitability and barriers to entry (Deckop, 1988; Eaton & Rosen, 1983; Rajagopalan & Prescott, 1990); further, controlling for the effects of industry significantly improves the degree to which the composition of top compensation is explained by organizational and individual factors (Agarwal, 1981; Eaton & Rosen, 1983). As a result of these factors, most scholars have focussed on one industry when classifying firms into the Miles and Snow strategic archetypes (e.g., Rajagopalan, 1997; Rajagopalan & Prescott, 1990; Veliyath et al., 1994).

#### Data Sources

Executive compensation data for 1996 were drawn from Form 40 submissions by the firms filed with the Ontario Securities Commission (OSC). The data for the cluster analytic procedures used in classifying firm strategy were taken from company annual reports, CompaD Canada database, and *Financial Post Historical*

*Reports*. The same sources were used for data on firm financial performance and size for the 1994-96 period. Missing data were acquired directly from the firms in question. A comparison of company-originated data and data on the electronic databases revealed complete accuracy of the latter data.

A survey of firm strategies using the basic paragraph method (see Procedures below) was used to validate the strategic groups derived from cluster analysis (a copy of the questionnaire is available from the authors). Data on tenure and CEO education were collected from this survey, as well as from recent editions of the publication *Who's Who in Canadian Business*.

#### Research Variables and Instrumentation

*Organizational strategy*: Firms were classified into strategic archetypes using the Miles and Snow (1978) framework. Many researchers have successfully utilized this typology to classify firms (e.g., Conant, Mokwa, & Varadarajan, 1990; James & Hatten, 1995; McDaniel & Kolari, 1987; Veliyath et al., 1994), and as Balkin and Gomez-Mejia (1990) state, "the Miles and Snow typology has proven to be very robust and adaptable as evidenced by its successful application to the study of a wide variety of strategic issues ... empirical results also provide strong support for its reliability and validity" (pp. 77-78). Along similar lines, in an evaluation of the validity of the Miles and Snow (1978) instrument (paragraph method and variations), Shortnell and Zajac (1990) state that "overall, the results provide strong support for the measurement of Miles and Snow's (1978) strategic types ... researchers can use the typology with increased confidence in future work in organizations and their strategies" (p. 830).

In measuring strategy, both "intended" and "realized" initiatives are important but the correspondence between the two is not necessarily high (Mintzberg, 1978; Snow & Hambrick, 1980). Actions, not intentions or plans, are likely to have a greater impact on costs and behaviours related to executive compensation. As such, the study focuses on realized strategies; that is, current strategies which have been consistent or stable over time (Miles & Snow, 1978; Mintzberg, 1978). This approach is consistent with several studies in the field (e.g., Chrisman, Hofer, & Boulton, 1988; Gerhart & Milkovich, 1990). Further, the Miles and Snow (1978) typology applies to business-unit level strategies. In this study, the business-unit and firm level strategies are the same since only firms competing in a single major business were utilized in the sample.

*Executive compensation* may be divided into three main components: fixed, short-term incentives, and long-term incentives. Total compensation would, of

course, be a combination of these components. While the sum of annual salary and bonus has been frequently used as a proxy for the level of executive compensation in previous research [the summation of these two figures represents approximately 64-80% of total executive compensation (Agarwal, 1981; Kerr & Bettis, 1987; Rajagopalan, 1997; Rajagopalan & Prescott, 1990; Veliyath et al., 1994)], the other components, especially stock-based compensation, are increasingly being used by company executives. Thus, it is logical that these should be measured separately since the determinants may differ across components.

*Fixed compensation* is a combination of salary and other annual compensation in 1996. *Salary* is measured as the amount reported, plus any consulting fees paid by the organization for his services (the sample was exclusively male). *Other annual cash compensation* (this is how it is reported by the firms) includes perks and benefits.

*Short-term incentives* in this study constitute the bonus component, which includes all annual cash compensation paid to chief executives as a result of agreed upon criteria such as performance. Thus, total short-term cash compensation includes total fixed annual compensation plus annual bonus.

*Long-term incentives* are measured mainly in terms of exercised stocks in 1996; that is, the amount of cash a CEO receives as a result of "cashing in" on held stock options. This variable has been similarly measured by many scholars (see, for example, Griner, 1995; Rose & Shepard, 1997) and is generally accepted as an indicator of stock-based compensation by the SEC, OSC, and accompanying legislation (Griner, 1995). Other long-term incentives are fixed incentives such as paid insurance premiums and imputed interest on reduced rate loans. However, this latter figure is typically small; thus, stock-based compensation is generally reflective of and constitute the major portion of long-term compensation. *Total annual compensation (1996)* is a combination of all the components.

As in previous research, *organizational performance* may be measured by both accounting and market-based indices (Gomez-Mejia, 1994). It is recognized that because of varying accounting procedures, some of these figures, such as reported profits or earnings per share, may be questionable. Further, market measures, such as share price, can reflect the impact of market idiosyncrasies rather than an organization's efficiency (Lambert, 1993; Sloan, 1993). As such, organizational performance is measured separately in terms of each of these indices, namely earnings per share and return on market/share price.

*Controls.* As in previous research, firm size is measured as the book value of a firm's total assets (e.g.,

Eaton & Rosen, 1983; Veliyath et al., 1994). The positive relationship between firm size and executive compensation is one of the few consistent findings in the literature (e.g., Agarwal, 1981; Barkema & Gomez-Mejia, 1998; Roberts, 1959; Taussig & Barker, 1925; Veliyath et al., 1994). The Canadian studies (Magnan et al., 1995; Zhou, 2000) have also found a similar relationship despite the fact that Canadian firms tend to be smaller and include a proportionately greater number from resource-based sectors. Large firms tend to be more complex. Therefore, higher compensation for CEOs of such firms may be needed to attract, motivate, and retain competent executives who can manage this complexity (Agarwal, 1981; Gerhart & Milkovich, 1990).

Executive tenure was also used as a control variable. As previous research suggests, firm-specific experience as a CEO may be a significant determinant (e.g., Agarwal, 1981); thus, this variable is operationalized as the total number of years the CEO has worked in that position in the firm under study (tenure in company and overall tenure were also measured; however, these were not included since they were highly intercorrelated with tenure in position). Further, previous research suggests that tenure in position is the crucial variable (e.g., Agarwal, 1981).

#### *Procedures*

The selected sample of firms was first categorized into Miles and Snow's (1978) strategic archetypes using cluster analysis, a technique commonly used to classify firms into strategic groups (Ketchen & Shook, 1996). Previous studies that have used cluster analysis to classify firms according to the Miles and Snow (1978) framework include Veliyath et al. (1994), Conant et al. (1987), and Smith, Guthrie, and Chen (1989). The use of cluster analytic techniques may be viewed as a psychometric advance over the self- and managerial-typing methods some researchers use to classify firms into Miles and Snow's strategic groups.

The firms were clustered on the following four variables/ratios: total revenues to assets; exploration expenditures to total revenues; general administrative expenses to total revenues; and total operating expenses to revenues.<sup>2</sup> The variables, derived from archival data, were averaged over a three-year period (1994-96) so as to allow relatively stable firm strategies to be derived (Veliyath et al., 1994). The selected classificatory variables represent integral aspects of the Miles and Snow (1978) typology and have theoretical support in the literature (see Thomas et al., 1991; Veliyath et al., 1994). That is, the variables are related to distinctive characteristics evident in Miles and Snow's archetypes. Two critical dimensions of firm strategy in the Miles and Snow

**Table 1**  
*Strategic Archetypes Derived from Cluster Analysis*

Cluster Variables <sup>a</sup>	Cluster 1 (prospectors)	Cluster 2 (defenders)	Statistical difference between Clusters 1 and 2 (F-Ratio)
Revenues to assets	.04 (p)	.54 (d)	113.63***
Exploration expenses to revenues	2.30 (p)	.17 (d)	3.12*
General administrative expenses to revenues	4.00 (p)	.21 (d)	6.51***
Total operational expenses to revenues	9.11 (p)	1.20 (d)	4.48**

Note. Cluster algorithm – Wards. Each variable averaged for the firm over three years: 1994-96. The figures reported are the actual means of the variables. The letters in parentheses indicate which clusters were the most prospector-like (p) or defender-like (d) on each row variable. Four cases were deleted (one for missing data and three “reactors”) thus reducing the sample to 98 (68 prospectors and 30 defenders). Statistical significance tested using a one-way ANOVA.

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$

<sup>a</sup>*Revenues to assets*. This ratio measures the efficiency of asset utilization. Defenders are characterized by stability and high degrees of operational efficiency and were thus expected to score the highest, followed by analyzers (who are between defenders and prospectors in terms of efficiency) and prospectors.

*Exploration expenses to revenues*. Previous research emphasizes the use of research/exploration expenditures to differentiate strategic types (e.g., Snow & Hrebiniak, 1980; Thomas et al., 1991). Hence, a ratio of exploration expenditures to total revenues was used as a standardized indicator of a firm's propensity to search for new/more products. A similar variable (R&D expenditures to total sales) has been used in a number of studies that investigated the Miles and Snow typology (e.g., Thomas et al., 1991; Veliyath et al., 1994; Hambrick, 1983; McDaniel & Kolari, 1987). Since prospectors engage in more innovative activity, they were expected to rank higher on this variable.

*General administrative expenses to revenues*. This is a measure of relative lack of administrative efficiency (Veliyath et al., 1994). As prospectors seldom attain high levels of efficiency, they were expected to score the highest on this ratio, followed by analyzers and defenders.

*Total operational expenses to revenues*. This is also a measure of lack of efficiency. It combines general administrative and exploration, as well as mining and other expenses. This is useful as it strengthens the relationships established by the separate expenses, as well as adding another dimension, viz., development and other expenditures such as promotion and advertising. Prospectors were expected to score the highest on this ratio.

(1978) model are “administrative and operational efficiency” and “the search for new or more products”, as evident in expenditures on exploration. The variables/data used in the cluster analysis reflect these considerations (see Table 1 and accompanying notes). For instance, revenues per unit of assets is a measure of the efficiency of asset utilization, which, as Veliyath et al. (1994) note, “is a solution to Miles and Snow's (1978) engineering adaptation problem [thus] defenders were expected, on average, the highest followed by analyzers ... and finally, prospectors (who were expected to have the lowest levels of efficiency)” (p. 152). The general administrative expenses per dollar of assets and total operational expenses per dollar of revenues ratios are measures of the relative lack of efficiency; thus, defenders are expected to have the lowest ratios and prospectors the highest.

An analysis of the icicle plots, agglomeration coefficients, and the dendrogram derived from the agglomer-

ative hierarchical cluster analysis, using the variables identified above, revealed three identifiable clusters: Cluster 1 was the largest group with 68 firms, with Cluster 2 having 30. Cluster 3 had only 3 firms. One firm could not be classified because of missing data. A total of 101 firms were thus classified. Based on the statistics of the classificatory variables, Cluster 1 was identified as prospectors and Cluster 2 as defenders (see Table 1). Cluster 3, though it revealed some reactor-type indicators, was too small for any substantive deductions. Thus, only these two groups (Clusters 1 and 2) were analyzed. While it was somewhat surprising that there were no firms identified as analyzers, this is not unusual in the literature (see for example, Rajagopalan, 1997; Simon, 1987). The absence of analyzers could be attributed to the fact that in order for a firm to be classified as an analyzer, it would have to be more efficient than a prospector and more innovative than a defender. In the metal mining industry, constrained by fluctuating profitability



and other factors, firms may be unable to deploy the resources for both internal efficiency and aggressive innovation, the hallmarks of an analyzer strategy (Rajagopalan, 1997). As Table 1 shows, firms classified either as prospectors or defenders display expected characteristics with respect to the classificatory variables; for instance, firms in Cluster 1 had significantly lower values on total revenues/assets, with Cluster 2 showing significant increases. This is to be expected since defenders are characterized in the Miles and Snow (1978) typology as the most stable and efficient, thus realizing the greatest asset utilization efficiency values.

#### *Validation of Strategic Types*

A multiple approach to validation was employed. First, the reliability of the clusters was examined. Reliability is a necessary but not sufficient condition of validity. An examination of the classificatory variables (split-half reliability test, with the sample arranged in alphabetical order) revealed no major differences in the classificatory variables that may affect subsequent statistical interpretations. Cluster analysis on the two halves, using the same procedures employed with the full sample, revealed 96% consistency; that is, 97 firms out of the 101 were classified exactly as in the full sample. This suggests high reliability of the original clusters. Second, the stability of the strategic groups/clusters was examined. While it is acknowledged that strategies may change over time, it is logical to assume that most companies would not change radically from a prospector to a defender, or vice versa. This was confirmed through an examination of the surveys/questionnaires received from respondents (respondents were asked to classify their firms for each year in the 1992-96 period). Thus, the strategic orientation of the firms was re-analyzed for the 1992-96, 1993-96, and the 1995-96 periods using relevant average data from these years. That is, the four ratios were recalculated for a five-year, four-year, and a two-year period respectively, and cluster analysis performed in each case. For the 1992-96 period, there were 2 deviations from the 3-year results for a consistency rate of approximately 98%; for 1993-96, there were 6 deviations (94% consistency), and for the 1995-96 period, 4 deviations (96% consistency). This not only suggests strategic stability but reliability of the clusters as well (test-retest analysis).

Finally, through questionnaire surveys, incorporating the basic paragraph method (Miles & Snow, 1978), self-classifications by respondents in the sample (mostly executives) revealed a high hit rate; more specifically, 84% of the classifications by CEOs/company executives corresponded with that derived from the cluster analysis (the response rate was relatively low—20%; neverthe-

less, a hit rate of 84% suggests high validity of the original clusters). It should be noted that this survey was used to help validate the classification of the strategic archetypes and, partly because of the low response rate, was not used as a pivotal data collection device (a copy may be obtained from the first author).

#### *Data Analysis*

H1a proposed that executives in prospector firms will earn more than their counterparts in other strategic types. To test this hypothesis, one-way analyses of variance (ANOVA) was conducted to assess the significance of mean differences across the two strategic groups derived from cluster analysis. H1b suggested that CEOs in prospector firms will earn proportionately more long term/stock-based compensation than their counterparts in defenders. Descriptive statistics, ANOVA, and hierarchical regressions (controlling for firm size and performance) were used to test this hypothesis.

Hypotheses 1c, 2a, and 2b proposed that firm strategy and firm performance will be positively related to and/or will explain some of the observed variance in the dependent variables (various components of chief executive compensation, plus total compensation). To test these hypotheses, descriptive statistics and correlation analyses were first conducted to assess the size and direction of relationships, and to assess probable inter-correlations. Then, hierarchical regression analyses were conducted with total CEO compensation for 1996, as well as the various components of the compensation package, as the dependent variables. Firm size was first entered as a control variable, followed by the firm performance variables, and finally firm strategy. The performance variables were averaged over the 1994-96 period, since firms tend to use immediate past and current figures as indicators to base compensation (Finkelstein & Hambrick, 1989). These data (1994-96) are considered long enough to limit the influence of short term irregularities but short enough to provide a reliable estimate of the organization's recent performance (Tosi & Gomez-Mejia, 1989). A dummy variable (0 = prospector; 1 = defender) was used to represent strategy. The initial ANOVA results suggested that executive tenure was not significantly different across strategic archetypes and, since no hypothesis was offered on this variable, it was dropped from the correlation and regression analyses.

#### *Results*

Table 2 shows the descriptive statistics of the relevant variables in the full and sub-samples (prospectors vs. defenders). Many of the variables vary considerably



**Table 2**  
*Descriptive Statistics*

Variables	Total Sample		Prospectors (P)		Defenders (D)		Statistical Differences between P and D
	Mean	SD	Mean	SD	Mean	SD	F-Ratio
Fixed Compensation	138.97	127.35	100.23	69.90	243.45	167.90	33.26***
Short-term Incentives	36.37	134.10	9.70	37.68	101.51	230.33	9.57**
Long-term Incentives	98.62	290.76	98.99	258.32	111.19	373.65	.03
Total Comp	274.00	400.60	208.92	282.50	456.16	567.20	7.73
Percent of LTI total comp.	.49	2.02	.84	2.60	.36	1.78	1.02
Size (log assets)	9.84	1.86	9.40	1.24	10.96	2.56	16.52***
EPS	.06	.61	.01	.52	.17	.78	1.37
Market Return	1.32	3.49	1.58	3.73	.88	3.13	.73
Tenure	6.43	3.81	7.09	2.91	5.83	4.53	.61

Note. All monetary figures are in thousands of Canadian dollars (except log assets); US dollars were converted using the appropriate rates for the various years.

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$

n = 98 in total sample (68 prospectors and 30 defenders; 4 firms could not be classified).

across strategic archetypes. While CEOs in defenders earned more than their counterparts in prospector firms, including all the components of the total compensation package, it is important to note that the proportion of long-term incentives/stock-based pay to total compensation is higher for prospectors (approximately 47%) than for defenders (24%). Table 2 also shows that prospector firms are smaller, having lower earnings per share (an accounting performance measure) but higher returns on stock investments to shareholders (a market-based performance measure). CEOs in prospector firms have also been in their current positions longer than their counterparts in defenders (though not at a statistically significant level).

H1a suggested that CEOs in prospector firms will earn more in total compensation, including all its components, mainly as a result of prospector-like behaviours such as innovativeness and risk-taking. However, as Tables 2 and 4 show, this hypothesis is not supported. In fact, CEOs in defender firms earn significantly more than their counterparts in prospector firms, except for long-term incentives; however, the difference in the latter compensation component is not significant (H1b). As shown in Table 2, even though the mean percentage of LTI to total compensation<sup>3</sup> for prospector firms is higher, this difference is not statistically significant ( $F = 1.02$ ;  $p = 0.32$ ); furthermore, firm strategy does not add to adjusted R square for this variable (percent of LTI to

total compensation), once firm size and performance are included in the regression equation (Table 4). The regression analysis also indicates that even after controlling for firm size and performance, CEOs in defender firms still get paid more than CEOs in prospector firms. Thus, H1a is not supported.

H2 proposed that firm performance would be positively related to CEO compensation. More specifically, it was proposed that accounting performance would have a greater impact on components of short-term compensation (fixed and incentives, see H2a) and that market-based performance would be a better predictor of long-term incentives/stock-based pay (H2b). As Tables 3 (correlation analysis) and 4 (regression analyses) show, there is support for both hypotheses. That is, for short-term compensation, earnings per share (EPS) is positively correlated with fixed annual compensation (0.23) and short-term incentives (0.45) at significant levels (support for H2a). However, for long-term incentives, EPS loses its significance; instead, market return is positively correlated (support for H2b) at a statistically significant level (0.33). It is important to note that the market for metals, especially gold, experienced some decline in the study period; otherwise, this relationship might have been even stronger. In the hierarchical regression analysis (Table 4), after controlling for firm size, EPS is a significant predictor of short-term incentives (0.25,  $p < .01$ ), and adds incrementally to adjusted R-square. For long-

**Table 3**  
Pearson's Zero-Order Correlation Coefficients (one-tailed)

	1	2	3	4	5	6	7	8
1	1.00							
2	.57***	1.00						
3	.24**	.05	1.00					
4	.69***	.56***	.82***	1.00				
5	.78***	.60***	.17**	.59***	1.00			
6	.23**	.45***	.13	.32***	.34***	1.00		
7	-.08	-.03	.33***	.20**	-.24**	-.02	1.00	
8	.48***	.28***	-.13	.14	.41***	.05	.20	1.00

Notes: \*\*\*  $p < .01$ ; \*\*  $p < .05$ ;

1. Fixed Annual Compensation; 2. Short-term Incentives; 3. Long term Incentives; 4. Total Compensation; 5. Size (log assets); 6. Earnings Per Share; 7. Market Return; 8. Strategy. (N ranges from 77-95; pairwise deletions).

term incentives/exercised options, market return is significant ( $0.36, p < .01$ ), as predicted.

For the control variables, firm size was positively related to all the components of executive compensation in the correlations and was a significant predictor in the regression analyses. On the other hand, CEO tenure in the current position showed no significant relationship with any of the compensation variables.

H1c suggested that firm strategy would be a significant predictor of CEO compensation, controlling for other important variables. That is, it would add explanatory power to the "standard" predictor variables, namely firm size and firm performance. As Table 4 shows, while the direction of the effect is not in line with the proposition (more compensation for prospectors), the size is significant for fixed compensation. That is, CEOs in defender firms earn significantly more in short-term compensation than their counterparts in prospector firms when all relevant variables are in the equation (defenders were coded as 1; a positive coefficient signifies more compensation for defenders). This effect does not apply for long-term incentives, which in turn affect total compensation, since the direction changes for these structural aspects of compensation. That is, for long-term incentives, the direction of the relationship is in line with that

proposed in the hypothesis. In other words, CEOs in prospector firms earn more than their counterparts in stock-based compensation; however, the effect is not statistically significant.

As Table 4 shows, adjusted R-square declines considerably from short-term (fixed and incentives) to total compensation. This is clearly a result of the effects of the long-term component. That is, the variables in the study explain short-term better than long-term compensation. Nevertheless, a significant amount of the variance is explained in all the components, as well as the overall package.

## Discussion and Conclusion

It was hypothesized that chief executives in prospector firms will receive more compensation—fixed, short-term, and long-term—than their counterparts in defender firms. These hypotheses were based on previous research that suggested that the CEOs would be appropriately compensated for behaviours generally found in prospector-like firms, namely innovation, creative thinking, and risk-taking (Rajagopalan & Finkelstein, 1992; Veliyath et al., 1994).<sup>4</sup> However, with the exception of

**Table 4**  
*Hierarchical Regression Results: Various Compensation Components as Dependent Variables*

Dependent Variables	Fixed Compensation	Short-term Incentives	Long-term Incentives	% of LTI to Total Comp.	Total Compensation
<i>Control Variable</i>					
Firm size	.78***	.60***	.19**	.36***	.59***
F-value	148.54***	51.35***	3.32	13.45***	47.90***
R-sq.	.61	.36	.04	.13	.34
R-sq. (Adj.)	.61	.35	.04	.12	.34
<i>Firm Performance</i>					
EPS	.07	.25***	.05	.03	.10
Market Return	.05	.06	.36***	.01	.30***
F-value	59.02***	22.01***	4.73***	2.13*	22.38***
R-sq.	.72	.49	.16	.08	.49
R-sq. (Adj.)	.71	.46	.13	.05	.47
Strategy	.19**	.03	-.05	.08	.03
F-value	48.61***	16.05***	3.47***	1.65	16.16***
R-sq.	.74	.49	.17	.05	.49
R-sq. (Adj.)	.73	.46	.12	.04	.46

Notes: In all the regressions/models, firm size had to be transformed. An examination of the residuals revealed no violations of assumptions necessary for regression analyses (e.g., normal distribution of errors). Even though the initial sample decreased from 98 (number classified) to 73 as a result of listwise deletions, the analyses were not affected since firms were not omitted in a systematic manner; that is, an examination of the firms deleted (5 prospectors and 20 defenders) suggested no significant differences in the main variables of the study.

\*\*\*  $p < .001$ ; \*\*  $p < .01$ ; \*  $p < .05$

long-term incentives, CEOs in prospectors received significantly lower compensation, controlling for firm size and other variables. These findings can be explained using theory and research on firm life cycles, and an examination of the structure of compensation packages across the strategic types.

Firm life cycle theory and research suggest that firms at the entrepreneurial and growth stages of their cycles tend to be relatively small and prospector-like (Daft, 1995), with research and exploration being emphasized. Such firms usually have limited financial resources and their ability to pay is consequently limited. Thus, they tend to emphasize performance-based and variable long term incentive rewards, such as stock-based compensation. A post-hoc analysis of the data

revealed that prospectors are significantly younger (measured as years since establishment) than defenders (18 years vs. 27 years, respectively; F-ratio = 3.17; p-value = 0.07).

In an earlier empirical study, Balkin and Gomez-Mejia (1987) found that firms at the growth stage of their product life cycles, where the proportion of research and development expenditures was relatively high, relied on incentive rewards. The reasoning applied to stages of the product life cycle can be applied to general firm life cycle. As Balkin and Gomez-Mejia (1987) noted,

the stage in the life cycle is likely to be a key determinant of compensation strategies and their effectiveness in achieving organizational goals. One would expect those firms at the growth stage to pay



employees more in the form of an incentive basis and less in the form of salary and benefits. Such a policy would allow a growing business to shift some of its compensation costs from a fixed expense to a variable expense. The advantage of this strategy is that the firm receives float from employees and pays a portion of its compensation costs when it is in the best financial position to do so ... as a result, the growing firm can secure greater flexibility to invest heavily in research and development, new technology, expansion of capacity, marketing and advertising (instead of additional compensation) to fuel the growth. (p. 171)

Rajagopalan (1997) also reported similar findings in her study; that is, prospector firms emphasize long-term incentives/stock options in their executive compensation strategies. Similarly, the findings in this study suggest that prospector firms are emphasizing long-term incentives (stock-based pay). This has allowed them to invest proportionately more in research, exploration, and development, as well as marketing and advertising (included in total operating costs). Defender firms are more mature and stable, and risk is consequently reduced. Thus, as firms become more defender-like, they are more likely to emphasize fixed pay (salary and benefits) and pay proportionately less in variable long-term incentives. In fact, as Table 2 shows, the stock-based component of the compensation package accounted for 47% of the total compensation package of CEOs in prospectors, compared to 24 % for defenders. In the regression analyses, these changing proportions are reflected in the comparative size and direction of the strategy coefficients when the dependent variables change from short-term to long-term compensation. Further, among the 98 firms analyzed in this study, 10 reported no annual cash compensation for their CEOs; that is, chief executives in these firms relied totally on the firm's market performance (stock-based pay) thus putting their entire compensation package at risk. Of these firms, 90% (nine of the 10) were prospectors.

The foregoing discussion suggests that compensation for CEOs in prospector firms may be lower than that of their counterparts in defenders since prospector firms are in the entrepreneurial stage of their life cycles and are thus placing emphasis on stock-based pay, some of which (viz., future options) could not have been calculated in this study. This line of research, focussing on the relationship between firm life cycles and executive compensation, may be an exciting area for future studies.

With respect to the firm performance-executive compensation relationship, the results suggest that while earnings per share (the accounting measure) is a significant predictor of short-term compensation, it loses its significance for long-term/stock-based compensation. In fact, share price growth<sup>5</sup> and return on stocks are better

predictors of such compensation. This finding is in line with that reported in Rajagopalan (1997); that is, accounting measures are better predictors of short-term compensation, and market measures better predict variable long-term incentives/stock-options. Thus, this research supports the view that while performance measures may not be demonstrating a significant impact on executive compensation in the literature, it is evident that an analysis of the impact of different performance measures does yield insights on the design of total compensation packages. Further, it is interesting to note that while the three-year average performance variables displayed significant effects, similar one-year variables did not; this suggests that executive compensation may be based more on cumulative performance than just performance in the preceding year. This issue is not generally addressed in the popular press.

With respect to the firm size-executive compensation relationship, this study confirms previous research, including a meta-analysis (Tosi, Katz, & Gomez-Mejia, 1997, as reported by Barkema & Gomez-Mejia, 1998), that reported a significant positive relationship between the two variables (see, for example, Agarwal, 1981; Roberts, 1959; Veliyath et al., 1994; Rose & Shepard, 1997). In this study, firm size is positively related not only to overall compensation but to every component of the compensation package as well.

Previous research evidence on the impact of executive tenure has been mixed. In this study, this variable does not have a significant impact on CEO compensation. Apparently, no compensation premium was placed on tenure.

As in U.S.-based research, firm size and, to a lesser extent, firm performance, have the most impact on executive compensation in this study. There are a few reasons why CEO compensation in Canada may be reflecting these dynamics evident in the United States. First, recent disclosure rules may be having a pull-effect as Canadian CEOs compare their relatively low compensation with their U.S. counterparts, some of whom work in U.S.-based subsidiaries of Canadian firms. That is, CEO compensation in Canada may be playing catch-up with, and be reflective of, CEO pay in the United States. Second, with the dismantling of trade barriers, Canadian CEOs are increasingly taking up world-wide positions, where they are probably making constant compensation comparisons with their counterparts. In view of the divergent results (compared to studies using U.S. data) with respect to the effects of firm strategy on CEO compensation, a few questions seem pertinent: Do Canadian firms place a different value on prospector-like strategies? Are the effects of firm strategy somehow bound by cultural factors? Are there industry effects? Since all the studies that have used Miles and Snow (1978) typology

to examine the firm strategy-executive compensation relationship can be described as exploratory, answers to such questions can only be addressed in future research.

As can be seen from the foregoing, this study adds several new insights on the level and structure of CEO compensation, some of which may be the subject for future research. First, this study is, to the best of our knowledge, the first to examine CEO compensation in Canada from a firm strategy perspective. Unlike comparative U.S.-based research, this study found that defender-type firms pay their executives more in short-term pay than prospector-type firms. One possible explanation for this unexpected finding may be found in theory and research on firm life cycles. Second, in using three-year performance data, we uncovered the possibility that some previous research, and studies cited in the popular press, may have underestimated the effects of performance on executive compensation. That is, we found that average three-year data were better predictors than one-year performance data. Finally, we found that accounting and market-performance data are associated differently with the components of the executive compensation package.

#### Limitations and Future Research

This study was confined to publicly traded firms in a single industry. While this is a necessary condition for testing hypotheses using Miles and Snow's (1978) framework, it limits the scope and generalizability of the study.<sup>6</sup> Nevertheless, as advocated in Miles and Snow's (1978) seminal study, research may be replicated in other industries, on an industry by industry basis, provided appropriate data are available. Further, no other industry on the TSE had a large enough sample to facilitate comparative analysis. Thus, future research should expand on this work to probably include firms on U.S. stock exchanges. Second, this study employed a cross-sectional research design. One of the main problems of such designs is that changes to relevant variables cannot be traced through time. Thus, as more data become available in the future, research should be expanded to take into consideration the effects of changes in variables such as firm size, performance, and strategy on executive compensation over time. Third, as a result of missing data (much of the data required for calculating the value of future options, using, for example, the Black-Scholes Option Pricing Formula, were not reported by firms in their proxy statements), the value of future options could not be calculated. While there is controversy on the method of calculations and impact of this form of compensation, it would be useful to incorporate into the analysis since it seems as if prospector firms place much

emphasis on this factor. In this study, the total compensation of prospector CEOs may have been underestimated because of a lack of incorporation of such stock grants; thus, both in-the-pocket (situations in which executives have options that can be profitably exercised—current share price above exercise/granted price—but they choose not to do so) and future compensation were ignored. Future studies should address this issue since data reliability emanating from firms, with guidance by the OSC, can only get better.

Finally, in the spirit of parsimony, this study restricted itself to just a few independent variables. However, it is obvious that a few more variables may be at work. This is especially the case when the explained variances were found to be relatively low (long-term and short-term incentives). One promising explanatory variable is CEO power measuring the influence chief executives may have on the Board of Directors committees that decide on their compensation (see, for example, Barke-*ma & Gomez-Mejia*, 1998; *Daily, Johnson, Ellstrand, & Dalton.*, 1998). Future research should take such variables into consideration.

In the opening quote of this paper, Maddocks (1979) stated that salaries constitute "comedy" and "exaggeration carried to the point of the ridiculous" (pp. 1-2). Many writers, especially in the popular press, often subscribe to this view. However, as more research is undertaken along the lines suggested by this study, more systematic knowledge and understanding may develop in this subject area. Perhaps there may be some method in the perceived madness after all.

#### Notes

1. We recognize the possibility that a reverse relationship may exist; that is, the levels and structure of executive compensation may help to determine firm strategy, firm size and firm performance. However, a focus on these relationships is beyond the scope and purpose of this study.
2. Total revenues include sales and other income from investments; assets are indicated by the stated book values; exploration expenses are those incurred in exploring new sites; general administrative expenses include salaries, rent, office supplies, and other related expenses (excluding advertising and promotion); and total operating expenses include all remaining expenses (such as advertising and promotion, mining at current sites, etc).
3. We are grateful to one of the anonymous reviewers for suggesting that this variable (percentage of LTI to total compensation) be used as a dependent variable in testing for H1b.
4. It is important to note that this study is not a replication of

any previous work. The Veliyath et al. (1994) and Rajagopalan and Finkelstein (1992) studies are the most similar of previous research. While the method of classifying firms into strategic types (cluster analysis) and focus (executive compensation) are similar to the two studies, this study utilizes different statistical analyses and different samples (industry and country). In comparing the two studies with this research, it should be noted that Veliyath et al. (1994), and Rajagopalan and Finkelstein (1992) did not attempt to measure the dollar value of the stock-option component. Thus, comparisons hold only for the salary and bonus components.

5. Tested but not included in study since it is highly correlated with stock returns.
6. Some authors view this as a strength since the focus is on strategic variation within a single industry (see Rajagopalan, 1997, for example). They argue, and justifiably so, that one cannot assess strategic typologies across industries since, for example, a prospector strategy in the auto parts industry may be deemed to be a defender in the software industry.

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