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Working Paper

14-082

March 2, 2014

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ABSTRACT

We argue that the language spoken by corporate decision makers influences their firms' social responsibility and sustainability practices. Linguists suggest that obligatory future-time-reference (FTR) in a language reduces the psychological importance of the future. Prior research has shown that speakers of strong FTR languages (such as English, French, and Spanish) exhibit less future-oriented behavior (Chen, 2013). Yet, research has not established how this mechanism may affect the future-oriented activities of corporations. We theorize that companies with strong-FTR languages as their official/working language would have less of a future orientation and so perform worse in future-oriented activities such as corporate social responsibility (CSR) compared to those in weak-FTR language environments. Examining thousands of global companies across 59 countries from 1999-2011, we find support for our theory, and further that the negative association between FTR and CSR performance is weaker for firms that have greater exposure to diverse global languages as a result of (a) being headquartered in countries with higher degree of globalization, (b) having a higher degree of internationalization, and (c) having a CEO with more international experience. Our results suggest that language use by corporations is a key cultural variable that is a strong predictor of CSR and sustainability.

Speaking of Corporate Social Responsibility

Decades of research on global corporate social responsibility (CSR) have shown it to vary significantly across countries, and that it is strongly influenced by the cultural and socio-economic environments in which firms operate (Aguilera, Rupp, Williams, & Ganapathi, 2007; Carroll, 1979, 1991; Matten & Moon, 2008). Studies in this tradition typically relate CSR practices to a country's national business system (NBS) bundles, such as political institutions, type of market competition, and cultural orientation (Campbell, 2007; Ioannou & Serafeim, 2012). In particular, a growing body of research has considered CSR as a culturally embedded organizational behavior, and empirically tested cultural influences on CSR using the renowned Hofstede cultural dimensions (Hofstede, 1980), as well as survey-based cultural data such as GLOBE's national cultural dimensions and the World Value Survey (e.g., Waldman et al., 2006a; Ringov & Zollo, 2007).

While these analyses have shown important differences between cultures in CSR practices, they also yield conflicting findings. That is, the very same cultural dimensions are frequently found to have opposite effects on CSR when using different samples and measurements of CSR. For example, power distance—an important Hofstede cultural dimension—is found to have both negative (Ringov & Zollo, 2007; Ioannou & Serafeim, 2012) and positive (Ho, Wang, & Vitell, 2012) relations with CSR engagement. Theoretically, the inconclusive findings in the literature likely reflect the obscurity of the underlying mechanisms by which national cultural variation affects CSR (Matten & Moon 2008). Empirically, given the durable nature of culture, the conflicting results are likely to be driven by either omitted variable biases or the inappropriateness of survey- and observation-based culture proxies, rather than by cultural change between sample periods (Straub, Loch, Evaristo, Karahanna & Srite,

2002). Thus, the aim of our study is to both theoretically identify the underlying mechanisms of cultural influence on CSR, and empirically measure cultures in a more objective and theory-based way.

In this paper, we introduce a new way to think about underlying variation in global CSR practices, focusing on how differences in cross-national CSR commitment stem from characteristics of the languages spoken across the globe. Research in linguistics and economics has shown that one of the most important factors that shapes culture and creates variation across countries is spoken language (Chen, 2013). As Hickmann (2000: 410) describes, "implicit or explicit linguistic categorizations may partially determine or co-determine non-linguistic behavior (categorization, memory, perception, or thinking in general). The implied conclusion, then, is that individuals' thinking partially differs across linguistic communities." For example, a recent wave of psychological and cognitive science research shows that language not only profoundly influences how people perceive the world, but also their implicit preferences (e.g., Ogunnaike, Dunham, & Banaji, 2010; Fausey, Long, Inamori, & Boroditsky, 2010; Boroditsky, 2011). Thus, languages do not merely express thoughts that are rooted in culture; the structures within language also shape the very thoughts that people wish to express.

A critical difference across languages is whether or not they require speakers to grammatically mark future events. That is, does the language separate present and future into different conceptual categories of time, or are they combined? According to many linguists, grammatically separating the future and the present leads speakers to disassociate the future from the present, as this would make the future feel more distant. However for some languages, such as German, differentiating between the present and future is optional, not mandatory like it is in English. Linguistics research has shown that by having the present and the future in different conceptual categories, obligatory future-time reference (FTR) in a language reduces the psychological importance of—and hence a person's concern for—the future (Dahl, 2000; Thieroff, 2000). Consistent with this argument, Chen (2013), who even after

controlling for other well-known cross-national explanatory factors such as legal origins, finds that strong-FTR speakers save less, retire with less wealth, smoke more, practice less safer sex, and are more obese. The conclusion is that being required to speak in a distinct way about future events leads speakers to take fewer future-oriented actions.

While research has shown that language use in general and obligatory FTR in particular shapes individuals' behaviors, it has not yet been established if language patterns used by corporate leaders shape the long-term decisions of firms, the question we address in this study. In developing our approach, we draw on research that has shown that different perceptual cognitive category systems of managers affect corporate decisions (e.g. Porac, Thomas, & Baden-Fuller, 1989; Kaplan 2011; Glynn & Navis, 2013). We specifically examine firm CSR practices as a long term behavior because in implementing these practices, firms frequently face a trade-off of incurring short term costs in order to benefit from the longer term future benefits associated with deeper stakeholder engagement (e.g., Hillman & Keim, 2001). Our core research foci in this paper are: (1) *Why do CSR practices vary significantly across countries?* (2) *How does the FTR of companies' working languages affect their adoption of, compliance to, and engagement in corporate social responsibility programs?*

We test these questions through a sample including the largest 1,500 global companies in the MSCI World Index and companies in other major global equity indices from 1999 to 2011, building a data panel of 91,373 firm-year observations across 59 countries. Our main data on firms' CSR performance are from MSCI and measure a corporation's environmental and social *risks and opportunities*. To investigate the effects of language on CSR, we adopt the same future-time criterion from Dahl (2000) and Chen (2013), which separates languages into two broad categories: those languages that require future events to be grammatically marked when making predictions (strong-FTR languages, like English), and those that do not (weak-FTR languages, like German).

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Our paper has two main contributions to the research literature. At a basic level, our study contributes to understanding international variation of CSR. While many have proposed CSR is a deeply cultural process (e.g. Matten & Moon, 2008), there are inconsistent findings on the specific cultural mechanisms by which culture affects CSR. As we show in this paper, it is crucial to examine language as an important underlying—and largely exogenous—feature that shapes cultural values and the norms in a society. We build on prior research that developed the FTR language approach to distinguish our approach from prior research literatures that have focused on survey or other observational elements of different cultural systems (Hofstede, 1980; Kim & Kim, 2010). Secondly, our research contributes to the ways in which perceptual category systems focus the attention, and subsequently, the behaviors, of corporate leaders. Here, we build on insights from literature on the behavioral bases of strategy (Gavetti & Levinthal, 2000; Kaplan, 2011; Ocasio, 2011) and specifically, on the effects of cognitive categories on corporate decisions (Porac et al, 1999). By showing that an exogenous and historically determined factor—spoken language—fundamentally shapes the cognitive categories of global decisions makers, we bridge an acknowledged gap between accurately assessing leaders' cognitive differences and rigorously showing that they have a causal effect on organizational outcomes (Kaplan, 2011). Our broader conclusion is that examining how and why language affects organizational behavior is essential to understanding differences in global organizational behaviors.

THEORY AND HYPOTHESES

Institutional theory has long established that business organizations are embedded in broader social structures, which exert significant influence on their strategies and governance (DiMaggio and Powell, 1983). National institutional contexts (both formal and informal) have been shown to shape the cognition and motives of managers, shareholders, and other key stakeholders, which further shapes the

way corporations are governed and managed (Aguilera & Jackson, 2003; Aguleria et al., 2007; Jackson & Deeg, 2008).

Drawing on these insights, the global CSR literature suggests that the social responsibilities of corporations reflect the historically determined institutions that shape durable and embedded national business systems (Carroll, 1979, 1991; Matten & Moon, 2008). A common denominator across these studies is that informal institutions such as national cultures have an important effect on organizations' CSR practices. This is not surprising, as cultures are persistent and uniformly affect different aspects of organization behavior (e.g., adoption, engagement, and compliance) (Hofstede & Hofstede, 2005), compared with more context-specific regulations and rules (Whitley, 1999). These empirical studies on cultural dimensions rely primarily on the renowned Hofstede cultural dimensions: power distance, individualism, masculinity vs. femininity, uncertainty avoidance, and long-term orientation (Hofstede, 1980; Hofstede & Hofstede, 2005), as well as on the survey-based GLOBE data (Waldman et al., 2006a) and World Value Survey (Parboteeah, Addae, & Cullen, 2012) all which have similar cultural dimensions. Yet the findings in this literature are inconclusive and so it is not possible to draw conclusions on what types of cultures affect specific types of CSR activities.

For example, regarding Hofstede's power distance dimension, Waldman et al. (2006a), Ringov & Zollo (2007), and Ioannou & Serafeim (2012) theorize and find a negative relationship with CSR, which they attribute to business leaders' use of power for the pursuit of personal benefit, whereas Ho, Wang, & Vitell (2012) find a positive relationship, which they attribute to societies' unlikeliness to tolerate questionable environment-related business practice due to already strict environmental regulations. For individualism, while Ioannou & Serafeim (2012) find a positive relationship, Waldman et al. (2006), Ho et al. (2012) and Parboteeach et al. (2012) find a negative relationship, and Ringov & Zollo (2007) find no significant relationship. For masculinity, a positive relation is found in Ho et al.

(2012) but the opposite is found in Ringov & Zollo (2007). Finally, uncertainty avoidance is found to be a positive predictor of CSR in Ho et al. (2012) but a negative one in Parboteeah et al. (2012). Therefore, while both theoretical and empirical research literature on CSR has shown in general that CSR is a culturally-driven activity, the mixed empirical evidence makes it challenging to identify the underlying mechanisms that affect cross-national CSR variation.

Future Orientation of Languages

Research in linguistics and economics has shown that one of the most important (and much less subjective to judge) factors that shape cultural differences around the world are the characteristics of the spoken language. This research shows that languages do not merely express thoughts that are rooted in culture; the structure of languages also shapes the very thoughts that people wish to express. In the linguistics literature, linguistic relativity (popularly known as the Sapir–Whorf hypothesis [Sapir, 1929; Whorf, 1940]) argues that the structure of a language affects the ways in which its respective speakers conceptualize their world, i.e. their worldview, or otherwise influences their cognitive processes. For example, a famous, though potentially apocryphal example is how Eskimos have many different words for snow, reflecting that snow is in fact seen differently by Eskimos and non-Eskimos.[1] Other studies have shown that people find it easier to recognize and remember shades of colors for which they have a specific name (D'Andrade, 1995) and that people's recognition memory was better for the focal colors of their own language than for those of English (Roberson & Hanley, 2010).

One key feature of languages is that they differ in when they require speakers to specify the timing of events, or when timing can be left unsaid (Dahl, 2000; Thieroff, 2000). Dahl (2000) develops a criterion to distinguish between languages that are considered "futureless" and those which are not.

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[1] Similarly, Magga (2006) demonstrates that the Saami living in northern Norway, Sweden and Finland, have a very rich vocabulary for snow and reindeer – especially for conditions and layers of snow, terms based on the transportation and pasture needs of reindeer and those based on different kind of tracks in the snow. With different kinds of derivations, the number of nouns, verbs and adjectives denoting snow, ice, freezing, and melting may easily amount to 1,000 lexemes.

"Futureless" languages are defined as those which do not require "the obligatory use [of grammaticalized future-time reference] in (main clause) prediction-based contexts". Dahl & Velupillai (2011) further provide a broad survey of the future tenses of languages around the world. As noted, Chen (2013) empirically showed that there is a strong correlation between weak-FTR languages and future-oriented economic behavior, and the effect of language is not attenuated by controlling for cultural and institutional traits. He argues that this is due to the fact that weak-FTR speakers perceive the future as closer.

To illustrate, English requires its speakers to habitually divide time between the present and future in a way that many other Germanic languages do not (as their grammatical future-time reference is optional when making predictions that have no intentional component).[2] The *World Atlas of Language Structures* gives an example of the distinction among several European languages in describing the weather for the future:

German:	*Morgen*	*ist*	*es*	*kalt*
	Tomorrow	is.PRS	it	cold
Finnish:	*Huomenna*	*on*	*kylmää*	
	Tomorrow	is.PRS	cold	
French:	*Il* *fera*	*froid*	*demain*	
	It do.FUT	cold	tomorrow	
English:	'It will be cold tomorrow'			

As shown in the above example, English and French mandatorily require speakers to put "will" or a future tense ("fera" in French) in the sentence describing tomorrow's situation, while German and

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[2] Copley (2009) offers a detailed analysis of the difference in obligatory FTR between English and German. Copley demonstrates that in English, "futurates" (sentences about future events with no FTR) can only be used to convey information about planned/ scheduled/ habitual events, or events which arise from law-like properties of the world. This restriction is not present in German, and futurates are common in German speech and writing. In addition, Thieroff (2000) documents what Dahl (2000) calls a "futureless area" in Northern and Central Europe, including most Finno-Ugric and all Germanic languages except English.

Finnish do not. Grammatically, saying "Tomorrow is cold" is the same as "Today is cold" in German and Finnish.

Linking Future Time Reference and CSR

While as noted, a number of studies in linguistics and economics have shown that language use affects culture and individuals' behaviors (e.g. Chen, 2013), this literature has left the connection between language use and corporate behavior—especially its social behavior—largely unanswered. Given the strong and persistent explanatory power of language FTR on future-oriented behavior as in Chen (2013), we believe it is likely to be an important but yet unexplored determinant of CSR, which is by nature a future-oriented concept and practice. We base our argument on the literature on leader cognition, particularly with respect to how leaders' conceptual categories, which are part of broader classification systems that vary by culture and spoken language, affect the strategic choices and actions of their firms and industries (e.g. Porac et al, 1995; Kaplan, 2011).

Prior research has shown a number of critical processes by which the cognitive categories of leaders, such as the extent to which future and present are joined (Kaplan & Orlikowski, 2013), affect strategic outcomes (Kaplan, 2011). An important characteristic is category sharpness, and as Glynn and Navis summarize (2013: 1126), "when categorical classifications and boundaries are unclear or in flux (as in emerging markets or industries)," the perceiver (decision maker) has few, if any, benchmarks against which to sort, classify and assign meaning, which affects sense-making and action. Category salience is another important process. The more salient the categories, the greater the extent to which actors identify with them, and, by implication, the extent to which they affect behavior (Choi et al., 1997; Van Dick et al., 2005). More generally, research has also shown that categories are part of broader classification systems that vary by culture (Glynn & Navis, 2013). Thus, a conclusion that can be drawn

from this research is that variation in conceptual categories along the dimensions of sharpness and salience affects leader perceptions and accordingly, organizational behaviors and strategies.

Conceptual categories as part of broader classification systems embedded in culture reflect how certain values, such as future-orientation, are coded in leaders' cognitions and affect their decision making. Language as an important cultural vehicle plays a prominent role in categorizing and coding such values through its grammatical classification of FTR. This is in line with the Sapir-Whorf hypothesis that language shapes people's cognition and behavior. Therefore, it follows that for speakers of weak FTR languages, the categorical boundary between present and future is not as sharp and salient, and so it is less likely they would see the future as a separate category and consequently, they would feel less pressure from the future and their behavior would be less future-oriented. Based on this argument, we hypothesize that variation in cognition shaped by linguistic background induces an organization to be less future-oriented and thus reduces its propensity to act socially responsibly and sustainably. This is a baseline hypothesis; even controlling for cultural variables, we predict a negative association between firms in countries with strong-FTR languages as the official working language and corporate CSR performance.

H1: Companies in countries with strong future-time reference (FTR) languages as the official working language have lower CSR performance.

Firm Internationalization and Effects of Language

If language exposure and use shape decision makers' cognitive categories and thus where they focus their attention, then presumably greater exposure to and use of different languages by the focal firm will lessen the direct effect of FTR on firm CSR. Prior research has shown that perceptual categories are flexible and boundaries of what is in and out of the categories can change over time and contexts (Porac et al., 1995) and that situational factors significantly shape where leaders place their

cognitive attention (Ocasio, 1997). In addition, the interaction between various factors (such as cognitive categories and language environments) that affect CSR can happen at multiple levels: national, organizational, and individual (Aguilera et al., 2007). Thus, at a theoretical level, we believe that the relationship described above may vary depending on how a variety of multilevel features related to firm internationalization foster a more multi-lingual environment and communications in the focal organization. We anticipate that the greater internationalization of firms' headquarters country, the firms' business, and their leaders will moderate the effect of FTR on firms' future orientation. Specifically, we explore several country-level and firm-level factors that can weaken such negative effects of language FTR on CSR performance.

Globalization of Firm's Headquarters Country. Globalization has a significant impact on corporate CSR performance. Globalization and the proliferation of cross-border trade and investment by multinational enterprises (MNEs) result in an increasing awareness of CSR practices relating to areas such as human rights, environmental protection, health and safety, and anti-corruption (Gokulsing, 2011). Access to more information through global and multilingual media enables the public to be more informed and to more easily monitor corporate activities. In addition, in more globalized countries, as firms are under higher pressures from international regulations and the spillover of stakeholder protection standards—such as the compacts, declarations, guidelines, and principles that outline norms for acceptable corporate conduct and are issued by UN, OECD, ILO, etc. (Kercher, 2007)—their behaviors tend to be more socially-oriented to conform to these standards.

Globalization is also closely related to the effects of language. The cross-country and interregional flows and networks of activity, interaction, and communications have blurred the boundaries between distinct languages. As with globalization, languages have evolved to adopt each other's grammars and ways of expression, and as a result, speakers of different languages have

increasingly adapted to each other's way of thinking. For example, English has adopted words and

phrases from many other languages, even in recent years, such as "yacht" from Dutch, "hamburger" and

"strafe" from German, and "ski" from Norwegian. Given this, it is reasonable to believe that a higher

level of country globalization facilitates the exchange of words and ideas, including those related to CSR.

Companies headquartered in a more globalized environment are more exposed to a multilingual

environment with business partners in different countries. Such multilingual environment makes a

manager more flexible to change the perceptual categories and attention on CSR than the single

language environment does. We focus on the headquarters country because that is typically the location

of the firms' top leaders (Cantwell, 2009). Therefore, the negative effect of language FTR will be

moderated by the country-level international exposure of the firms' headquarters location.

H2: The negative association between CSR performance and strong FTR is weaker for

firms headquartered in countries with a higher degree of globalization.

Firm-level Internationalization. CSR practice is not only affected by globalization at the

country-level, but also by MNEs' global exposure. A large literature on CSR and FDI points out that

FDI as a driver of the spillover of CSR standards and practice has resulted further empowerment of

MNEs (Hasan, 2011). On the one hand, MNEs are in a powerful position to promote change in critical

environmental and social issues such as pollution and human rights violations, especially in developing

counties. On the other hand, MNEs have become increasingly pressured by external groups such as

NGOs to operate with a higher level of social responsibility. For instance, Chapple and Moon (2005)

show that companies serving customers in multiple countries engage in more CSR than those just

serving their home country, presumably because of the need to satisfy more diverse stakeholders. Thus,

the extent to which a firm is dependent on foreign consumer markets and productive resources would

likely positively affect its CSR.

Firms' internationalization is highly related to language effects as well. MNEs are typically multilingual communities in which the parent's and the subsidiary's functional languages are concurrently used and recursively linked through intra-corporate communication networks. The MNE's language system is in accordance with organizational form, strategic choice, and expatriate employment in the context of evolving environmental and organizational realities (Luo & Shenkar, 2006). Furthermore, MNEs usually operate with business partners around the world and are exposed to both strong- and weak-FTR languages. Multilingual communication, whether between headquarters and subsidiaries or among subsidiaries across different countries, will affect many MNEs activities, such as knowledge transfer, merger integration, global value chain insource/outsource, and global teams cooperation (Zaheer, Schomaker, & Nachum, 2012). All these will reduce the importance of the use of a single language and weaken the pure negative effects of language FTR on CSR. Therefore,

H3: The negative association between CSR performance and strong FTR is weaker in companies with a higher degree of internationalization.

Firm Leaders' International Experience. As Ocasio (1997: 197) notes, "The most critical players in attention regulation are typically the CEO and the top management group," and a long line of research has shown that executives' backgrounds drive the decisions they make (Hambrick & Mason, 1984; Waldman, Siegel, & Javidan, 2006b; Hambrick, 2007). Furthermore, CEOs' personal attitudes and values have been shown to be a key driver of CSR (Hemingway & Maclagan, 2004), and international experience helps shape the global mindset of the CEO (Carpenter, Sanders, & Gregersen, 2001; Nummela *et al.*, 2004). Such international experience and global mindset may lead to a greater focus on global issues and diversity (Carpenter & Fredrickson, 2001), and make the CEO more open to the adoption of international diversified standards of CSR.

Leaders' internationalization is also strongly associated with their flexibility using different languages, and thus their ability to moderate the effects of a single language. When exposed to a diversified language environment, during either work or education, CEOs better understand cultural dynamics and differences in social norms, and perhaps the overseas educational experience better shapes language and other skills (Whitley, 1999). Such multilingual experience helps CEOs change cognitive categories and attentions, makes them sensitive to diverse cultural expectations and social/ethical norms (Paul, Meyskens, & Robbins, 2011). Therefore, CEOs' international experience—international work experience or overseas education—should attenuate the negative effects of language FTR on CSR performance.

H4a: The negative association between CSR performance and strong FTR of the language of the firm's nationality is weaker if the CEO has more international work experience.

H4b: The negative association between CSR performance and strong FTR of the language of the firm's nationality is weaker if the CEO has more overseas education experience.

METHODS

Data and Sample

We test our hypotheses on several large global panels. We focus on both the voluntarily initiative aspect (as an atomistic corporate choice) and the legally mandated aspect (as compliance with law) of CSR. Our primary data source for a firms CSR performance are from MSCI's Intangible Value Assessment (IVA) program, which measures a corporation's environmental and social *risks and opportunities*, and is compiled using company profiles, ratings, scores, and industry reports,[3] and is

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[3] The information on which the IVA ratings are based is extracted from the following sources: (a) Corporate documents: annual reports, environmental and social reports, securities filings, websites, and Carbon Disclosure Project responses; (b) Government data: central bank data, U.S. Toxic Release Inventory, Comprehensive Environmental Response and Liability

available from 1999 to 2011. Its coverage comprises the top 1,500 companies of the MSCI World Index (expanding to the full MSCI World Index over the course of the sample period); the top 25 companies of the MSCI Emerging Markets Index; the top 275 companies by market cap of the FTSE 100 and the FTSE 250; and the ASX 200. For this large sample with global coverage, MSCI constructs a series of 29 CSR ratings for each company, covering the following dimensions: strategic governance, human capital, stakeholder capital, products and services, emerging markets, environmental risk factors, environmental management capacity, and environmental opportunity factors. Among a total of 29 sub-dimensions of MSCI's rating, *Labor Relations*, *Industry Specific Risk*, *Environmental Opportunity* receive the highest weights in the global rating (they account for 80%). This rating is frequently used as a measure of firm CSR performance (Ringov & Zollo, 2007; Ho, Wang, & Vitell, 2012). Furthermore, we have complemented the IVA rating from MSCI with the *RiskMetrics EcoValue21 Rating* and the *RiskMetrics Social Rating*, which are provided by RiskMetrics Group and respectively capture the environmental and social aspects of CSR. To show the robustness of our results across different rating systems, we use these three CSR ratings, MCSI IVA, RiskMetrics EcoValue21 Rating, and the RiskMetrics Social Rating as the dependent variables in our study.

It is also important to note that firms in our sample are rated against their industry peers (sectorial analysis) from both domestic and international markets, thus the ratings do not depend on the cross-country difference in jurisdiction, regulation and local CSR situation. This makes our cross-country data more credible and guarantees that our CSR ratings are not biased by country-specific characteristics. Our main sample covers 91,373 firm-year observations from 59 countries. We classify our sample firms into 17 aggregated industries.

Information System (CERCLIS), RCRA Hazardous Waste Data Management System, etc.; (c) Trade and academic journals included in Factiva and Nexis; (d) Professional organizations and experts: reports from and interviews with trade groups, industry experts, and non-governmental organizations familiar with the companies' operations.

We have also obtained country-level sustainability data from Vigeo. The Vigeo Sustainable Country Rating uses sovereign-level metrics (different from MSCI which uses firm-level metrics) to rate each country based on the analysis of more than 120 risk and performance indicators in three domains: (1) environmental protection; (2) social protection and solidarity; (3) rule of law and governance. With the country-level rating, we are able to empirically verify the relationship between corporate social responsibility and societal sustainability. The country-level sustainability ratings help us verify the credibility of our firm-level CSR ratings, as high correlations between the two datasets would indicate that CSR is closely connected to the sustainability of the economy and society.

Regression model

We conduct our analysis using both random-effects and fixed-effects models. The dependent variables are the three different CSR ratings described above. The key explanatory variables include the main variable FTR, a dummy variable indicating whether the firm's official language is a strong- or weak-FTR language,[4] and the aforementioned moderating variables: country-level *Globalization Index*, firm-level *% Foreign Assets/ Total Assets* (a proxy for firm-level internationalization), and *CEO International Work Experience* and *CEO Overseas Education Experience* (proxies for leaders' internationalization), as well as their interactions with FTR. The regression model is specified as:

$$
\begin{aligned}
CSR_{it} = \beta_0 + \beta_1 \cdot FTR_i + \beta_2 \cdot Globalization_{it} + \beta_3 \\
\cdot (FTR_i \times Globalization_{it}) + \beta_4 \cdot \%ForeignAssets_{it} + \beta_5 \\
\cdot (FTR_i \times \%ForeignAssets_{it}) + \beta_6 \cdot InternationalWork_{it} \\
+ \beta_7 \cdot (FTR_i \times InternationalWork_{it}) + \beta_8 \cdot OverseasEdu_{it} + \beta_9 \\
\cdot (FTR_i \times OverseasEdu_{it}) + \gamma \cdot X_{it} + \varepsilon_{it}
\end{aligned}
$$

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[4] The official languages of most countries in our sample are unitary in FTR – either strong or weak – except Belgium and Switzerland, where both strong- and weak- FTR languages exist as official languages. We carefully classify firms based in Belgium and Switzerland according to the location of their headquarters.

where β's are coefficients to be estimated on the variables of interests, and X_{it} is the vector of control variables described below.[5]

The country-level control variables capturing economic and social development include *Legal Origin* (common laws versus civil laws), *Rule of Law,* and *GDP Per Capita*. Although countries' legal origins are believed to be fundamental determinants of economic outcomes (La Porta et al., 1998), they are also highly correlated to FTR due to the history of European colonization, as Europeans transplanted not only their legal institutions but also their languages in their colonies. To avoid multicollinearity, we apply a two-stage approach by regressing *Legal Origin* (the English common law dummy) on FTR in the first stage, and put its residual (which is orthogonal to FTR) as an explanatory variable, together with other independent variables, in the second stage regression. In addition, we control for potential country-level cultural channels on CSR, by including the widely-used Hofstede's five cultural dimensions (Kim & Kim, 2010). These cultural controls help explore whether non-linguistic cultural traits or norms are coincident with language to determine CSR.

At the firm-level, we control for ownership concentration, proxied by the ownership stakes held by the largest shareholder. This is because (lack of) CSR adoption can result from a conflict between large shareholders and other stakeholders (Barnea & Rubin, 2010) that is manifested in the firm's ownership structure (Oh, Chang, & Martynov, 2011). As a major corporate governance mechanism, ownership concentration determines the extent of shareholder activism against management as well as potential expropriation on minority shareholders by dominant shareholders. We also control for several indicators of different aspects of firms' financial performance (constraints), which are also believed to be key drivers of CSR (Wang, Choi, & Li, 2008; Wang & Qian, 2011; Hong, Kubik, & Scheinkman,

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[5] Countries with the Socialist origin are excluded from the regression due to their consistently much lower CSR ratings (on average more than 2 grades lower than the rest countries) in all dimensions, and their particularity in institutional infrastructure and legal traditions. In La Porta et al. (1998), Socialist countries were also excluded from regressions for similar reasons.

2012). These include ROA, Tobin's Q, interest coverage, short-term investment to operating cash flow sensitivity, and slack as proxied by the current ratio (current debt to current assets) (Julian & Ofori-dankwa, 2013). Furthermore, we control for CEO gender, as the effect of top executives' gender on corporate propensity to engage in CSR has been well documented in the literature (Marquis & Lee, 2013).

Finally, we control for time fixed effects and industry fixed effects. In unreported regressions, we also control for country fixed effects, which omit several time-invariant country-level variables, but the results on FTR and its moderators are similar. Our sample's country coverage, the official languages and their FTR are shown in Appendix A. The detailed descriptions on our independent variables and control variables are in Appendix B.

It is important to note that standard errors need to be clustered in panel data regressions; otherwise the residuals may be correlated across firms or across time and lead to biased estimation. This is particularly true for our study, since sharing of common working languages across firms, countries, and time will definitely violate the "independent identical distribution" (i.i.d.) assumption of residuals. Therefore, following Petersen (2009), the standard errors are clustered at the country level and the firm level (in different models), but the results are not much different.

RESULTS

We first investigate the link between firm-level CSR and country-level sustainability. The first three columns in Panel A of Table 1 show the Pearson correlation coefficients and their statistical significance. On average, the correlations range from 20% to 30%, which is considerably high given that the two datasets use completely different rating metrics. This confirms that our CSR measurements do reflect sustainability issues (Aguilera et al., 2007), rather than other value-diversion concerns such as managerial agency problems (Friedman, 1970; Cheng, Hong, Shue, 2012; etc). To get a general sense of

the effect of language FTR on sustainability at the country level, we also correlate our FTR measure with various country-level sustainability ratings. Their correlation coefficients and their statistical significance are shown in the last column of Panel A. The results show that FTR has a negative association with a country's sustainability scores, echoing our argument that future-orientation (sustainability) is lower when the separation of the future and current tenses of the language that people speak is obligatory. Finally, Panel B of Table 1 reports the summary statistics of our key variables, and Table 2 shows the correlations of these variables, including the country-level and the firm-level predictors. Few of the independent variables are highly correlated, especially with language FTR, which rules out multicollinearity concerns.

[Insert Tables 1 and 2 about here]

Tables 3—5 show the results on both the main effects of FTR, and the effects of various country-level and firm-level moderators as we hypothesize. The dependent variables are the overall IVA rating in Table 3, the RiskMetrics EcoValue rating (focusing on corporate environmental performance) in Table 4, and the RiskMetrics Social rating (focusing on corporate social performance) in Table 5. We run regressions based on these CSR ratings with standard errors clustered at the firm-level; in unreported results based on standard errors clustered at the country-level, the coefficients and standard errors are similar to clustering at the firm-level. For all three tables, the results for testing the main effect of language FTR are reported in column (1), and one moderator is tested in each specification for columns (2)—(5), and then all moderators are tested together in column (6). The coefficients on FTR for almost all specifications across the three tables are negative and statistically significant above the 95% confidence level. The economic significance is non-trivial either: companies in countries with strong-FTR language as their official/working language on average underperform those speaking weak-FTR languages by more than 1.2 grades of CSR rating (on a scale of 7). Therefore, our H1 that strong

language FTR (such as English, French, and Spanish) is associated with lower CSR rating, ceteris paribus, is supported.

Column (1) of Tables 3, 4, and 5 shows the results of regressing CSR ratings on FTR and other country-level and firm-level variables, but without interaction terms. Several interesting observations are made. First, at the country-level, the coefficients on the degree of country globalization are positive and statistically significant for the overall IVA ratings and the social ratings, but not for the environmental ratings. However, laws and national wealth do not seem to be a predictor of CSR, as none of the coefficients on Rule of Law, the orthogonal component of Legal Origin (English Common Law), and Ln(GDP per capita) are significant. At the firm-level, higher ownership stakes held by the largest shareholder is significantly related to lower CSR rating, though the coefficient is only significant for the environmental rating. Interestingly, the coefficients of most financial performance variables (Tobin's Q, financial constraints, and interest coverage) are not statistically significant, except the one on slack (current ratio) —firms with higher current ratio actually receive lower CSR ratings. ROA shows some significant and positive relations with CSR, but the rest of the results on financial performance do not strongly support the traditional "doing good by doing well" conjecture. At the individual level, CEOs' gender and international experience—either work or education—do not seem to directly contribute to CSR performance, as none of the coefficients on their main effects are significant. Furthermore, the effects of cultural dimensions are not strong, either economically or statistically. These results on cultural dimensions reinforce our argument that "culture" in general (values and norms) is not a persistent predictor of CSR, while only the specific underlying mechanism that carries culture— *language*—is the key determinant. Overall, the above results indicate that language FTR is a more fundamental source of CSR than the rule of law, economic development, cultures, firm-level financial and operational concerns, and CEO attributes (or language FTR absorbs their effects).

We then turn to the effects of the hypothesized moderators. At the country-level, column (2) of Tables 3—5 shows the results of having country globalization as the moderator. It is clearly shown that the coefficients on the interaction term between country globalization and FTR are all statistically significant at the 1% level, which implies that the degree of globalization of the country is a strongly positive moderator for the effect of language on CSR for all three dependent variables. Economically, a one standard deviation increase of the globalization index of a country with strong FTR leads to an average of 1.8 standard deviation increase in the CSR rating, which reduces the pure economic significance of the negative effect of FTR by more than a half. Therefore, our H2 is supported.

At the firm-level, column (3) of Tables 3—5 shows that the coefficients on the interaction term between "% Foreign assets"—representing the degree of internationalization of the company—and FTR are positive and statistically significant. This indicates that the degree of firm internationalization is also an important moderator for the negative effect of language on CSR. Economically, a one standard deviation increase of the percentage of foreign assets over the firm's total assets in a strong FTR country induces an average of 0.48 standard deviation increase in the CSR rating, which also lowers that of the negative effect of FTR by more than a half. When the variable "% Foreign assets" is replaced by "% Foreign sales", the effect is similar. Therefore, our H3 is upheld.

The CEO's overseas educational background is a strong moderator for FTR on all CSR ratings, as the coefficients on its interaction with FTR are all positive and statistically significant. The economic significance of the interaction terms is again about half of that of FTR's main effect (a firm with a strong FTR language scores 1.8 grades lower in the CSR rating on average, which is weakened by about 1 grade if the CEO had overseas education). However, it is not so for CEO's international work experience, as the coefficients on its interaction with FTR are not significant. Overall, CEO's international experience does play a significant moderating role in attenuating the negative effect of

language FTR, but this role is mainly carried out through CEO's overseas education. This may imply that a global mindset on sustainable strategies and multilingual skills are more likely to have been acquired by the CEO during the education rather than work experience. This result largely supports H4b, though not H4a. Language remains the most consistent and significant predictor of CSR. Finally, when we include all interaction terms together in one model (column (6) in Table 3-5), the statistical significance of most interaction terms remains, which confirms our above results. We relied on these partial models (column (2—5) in Table 3—5) for testing our moderator hypotheses, since the full model (column (6) of Table 3—5) may suffer from multicollinearity due to multiple interactions.

[Insert Tables 3-5 about here]

Figures 1a—1d show the slopes of the effects of language FTR under different moderating conditions. As Figure 1a shows, the slope for firms in countries with a higher degree of globalization is flatter than the slope for firms in countries with a lower degree of globalization. In other words, firm CSR performance in countries with higher degree of globalization reacts less strongly to (strong) language FTR than in countries with lower degree of globalization, which further supports H2 on the moderating effect of country globalization. Similarly, Figure 1b shows that the slope for firms with a bigger proportion of foreign assets is flatter than the slope for firms with a smaller proportion of foreign assets. This indicates that CSR performance in more internationalized firms is less sensitive to the negative effect of language FTR than in less internationalized firms, and supports H3 on the moderating effect of firm-level internationalization. Regarding the executive-level moderators, Figure 1c does not clearly show a difference between the slopes for CEO with more international work experience and for CEO with less international work experience, while Figure 1d shows more clearly that the slopes for CEO with more overseas education is flatter than for CEO with less overseas education. Therefore, firm

CSR performance reacts less strongly to language FTR in firms with overseas educated CEOs, which again supports H4b.

[Insert Figure 1 about here]

Our empirical results are consistent with basic intuition on the effect of language FTR: People in a more globalized society and more globalized multinational corporations, and with more overseas experience, are more likely to be multilingual and adapt to different languages, such that the negative effect of language FTR on CSR is lessened. Relatively, GDP growth, corporate ownership structure, financial performance, and CEO gender are more about companies' propensity to engage in CSR, but are not directly related to the effect of language. For example, ownership concentration itself is an important predictor of a firm's environmental performance, but is not related to language, and therefore does not seem to act as a moderator for the effect of language FTR on CSR (In unreported results, the coefficients on the interaction term between % Largest owners' shares and FTR are insignificant).

Robustness Checks

The above results are robust to clustering standard errors at the country-level rather than at the firm-level. In fact, the standard errors between the two types of clustering are not very different in our sample. In addition, to triangulating the measurement of CSR (Delmas, Etzion,& Nairn-Birch, 2013), we have utilized our rich CSR data and tested the above relationships using other CSR samples, including MSCI Impact Monitor, Vigeo Corporate ratings, and Asset4 ratings, which are all firm-level panel data with global coverage (results available on request). Most of the above results still hold: Language FTR remains significantly negative, and the effects of all three moderating variables remain significant and positive.

These results further survive when we exclude the parent countries (Britain, France, and Germany) and Scandinavian countries from the regressions and only analyze the former colonies, and

when we only focus on the subsample of Belgium and Switzerland where both strong- and weak-FTR languages exist. This confirms our earlier arguments and suggests that: (1) the language effect is not driven by a "Scandinavian bias" or a "parent-country bias"; and (2) it is valid within countries that have FTR variation.

One may raise the concern that the variation in CSR performance across the world is driven largely by religion and religiosity—believed to shape the value and norms in a society—which have been documented as an important factor in influencing economic behavior (e.g., Iannaccone, 1998; Barro & McCleary, 2003). We therefore address this concern by including a religion variable in a subsample of religion-dense countries. Given that Christianity is the most widespread religion in the world and closely related to work and social ethics (Arruñada, 2010), we rerun the afore-specified regressions based on a subsample of Christianity-majority countries—those with more than 50 percent of population being Christians—and use the ratio of the percentage of Catholics to the percentage of Protestants as a proxy for the influence of religions. In unreported results,[6] the previous findings are upheld: the coefficients on FTR remain negative and significant, while those on its interaction with moderators are mostly positive and significant.

DICSUSSION AND CONCLUSIONS

The question of whether languages shape the way people think goes back centuries; Charlemagne (AD 742—814) proclaimed that "to speak another language is to process another soul." Linguists have long believed that people from culturally different backgrounds tend to order their worlds differently based on the language they use, such that some languages are hinged to categorical structures where time is conceptualized in more abstract terms. In this study, we link language as a culturally

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[6] These results are available upon request.

embedded context with corporate decision making on future-oriented behaviors, by focusing on whether languages with strong future-time reference, in which the categorical boundaries between present the future are sharper and more salient, significantly reduce firms' propensity to engage in CSR activities.

Our empirical results support the hypothesis that languages that grammatically separate the current tense from the future tense can significantly affect how corporations perceive future-oriented strategies, and so make corporate behavior less future-oriented. A key aspect in researching issues of culture is to find exogenous factors that fundamentally determine corporate behavior and strategy. In this sense, language, which is shaped by historical and geographical factors, can be seen as a strong explanatory factor. Our empirical results confirm this argument: even after clustering standard errors and adding an aggressive set of control variables at the country-level and the firm-level, language FTR is the only persistent predictor of CSR across a large sample of global firms. We take this as strong evidence that FTR strength in corporate decision makers' language of use affects the extent to which they enact future-oriented strategies: caring about environmental and social issues in order to achieve both corporate and societal sustainability in the long run. In addition, further supporting our theory is that several country-level and firm-level factors significantly act as moderators for such language-driven effects. These moderators are related to internationalization, including the degree of globalization of the country, the degree of internationalization of the firm, and the CEO's international exposure, especially overseas education. These findings add confidence to our conclusions in that, presumably, internationalization at these different levels of analysis would partially reduce the FTR effect as companies and their leaders become more cosmopolitan and gain experience in a wider variety of languages. We see our results as having important contributions to two different literatures; the globalization of CSR, and how leader attention and cognition affect organizations strategies and behaviors.

Contributions to Research on Global CSR

Over recent decades, researchers have begun to understand how various institutionally-embedded organizational behaviors, such as CSR, vary across countries, with most investigations focusing on the standard set of NBS—cultural, political, legal and economic systems—examined in other studies (e.g., Aguilera et al., 2007; Campbell, 2007; Matten & Moon, 2008; Ioannou & Serafeim, 2012). While the NBS categories of formal institutions such as the political and legal systems are usually context-specific, cultures are broader and more persistent, and thus may better capture various aspects of business ethics and behavior (Hofstede, 1980; Hofstede & Hofstede, 2005; Waldman et al., 2006).

However, as the conflicting findings that aim to connect underlying cultural dimensions and CSR suggest, conceptualizing culture is difficult and subjective due to its broad and intangible nature. Our approach in focusing on linguistic differences adds considerable insight into understanding international variation in CSR practices and their cultural roots, thus our findings have important implications for both the research and practice on this topic. As we show, variation in CSR cross-nationally is not a function of culture as conceived by standard typologies, but stems from language use, which is an underlying feature that shapes cultural values and the norms in a society. Our empirical results not only add to the debate on the fundamental determinants of CSR, but also contribute to the understanding of the fundamental roles of languages in shaping economic behavior. Like the Chen (2013) study that examined individual level differences as a function of language use, we believe our study is really only a first step in identifying a novel, yet highly important underlying factor that shapes cross-national organizational behavior.

Furthermore, recent studies also argue that the spread of CSR globally is driven by isomorphic forces as firms and countries seek to gain institutional legitimacy (Matten & Moon, 2008). As business

has globalized over the past decade, there has been increasing pressure on companies around the world to join in the global movement for corporate social responsibility (Ioannou & Serafeim, 2012). Moreover, the multilevel interactions between individual, organizational, and social changes gradually eliminate the gap across countries in their CSR policies and practices (Aguilera et al., 2007). Our study contributes to understanding the globalization of CSR by showing that internationalization at the home-country level, the firm level, and the leader level interacts with culturally-embedded language, which can significantly reduce the negative effect of language FTR on CSR. Furthermore, our empirical evidence indicates that the spread of CSR practices under multilevel globalization is not only between the United States and Europe, as suggested by Matten & Moon (2008), but also across other parts of the world, including many emerging economies. We believe such a multilevel approach can be applied to study the globalization of other organizational behavior in the contexts of international management and global strategy.

Contributions to Research on the Cognitive Bases of Strategy

There is increasing attention paid to how cognition affects corporate action, yet two key tensions underlying this research remain largely unsolved: the extent to which researchers are able to accurately capture cognition and the extent to which studies can attribute causality to leader cognition (Walsh, 1995; Kaplan, 2011). While research has focused on capturing the content and variation in leaders' cognition, without systematic longitudinal data, it is difficult to rule-out the possibility that this variation reflects underlying industry or corporate characteristics. Even allowing for longitudinal analysis, the focus in the literature is on coding leaders' cognition through archival documents such as CEO letters in Annual Reports (e.g. Abrahamson & Hambrick, 1997; Barr et al., 1992; Cho & Hambrick, 2006), or use proxies such as managers' demographic backgrounds, as is common in top management teams research (e.g. Hambrick & Mason, 1984; Hambrick, 2007). However, there are significant questions about how

accurately these approaches capture differences in leader cognition, since it is well known that public relations and marketing firms are heavily involved in creating annual reports. Thus, in traditional research on the cognitive bases of strategy, there has been a tradeoff between accurately assessing cognition with detailed observational data that is difficult to collect longitudinally, and being able to firmly establish a causal link with a corporate level outcome.

By identifying important linguistic differences across companies' working languages, we have introduced a fundamental and important exogenous factor into this literature that allows us to make a valid link between accurately assessed cognitive variation and corporate behaviors around the globe. Almost twenty years ago, Meindl et al. (1994: 293) predicted that "(i)n the future, the most important studies will clearly show linkages between cognition, behavior, and organizational outcomes." Yet, because of the fundamental difficulty in assessing cognition and connecting it to outcome, studies that can firmly make this link are rare (Kaplan, 2011). Examining how and why language affects the perceptual categories of managers is essential to understanding differences in global organizational behaviors. We thus encourage future research to build on our study in a number of different directions. We believe that studies of effects of FTR on organizational behaviors may be able to show additional future behaviors affected by this important variable. Corporate social responsibility, as an obviously future-oriented behavior, was a natural first choice of investigation, but like the economic studies that have tied FTR use to a range of individual behaviors (Chen, 2013), we believe that showing how language use shapes firms at a more fundamental level will be very important to understanding global organizational behavior more generally.

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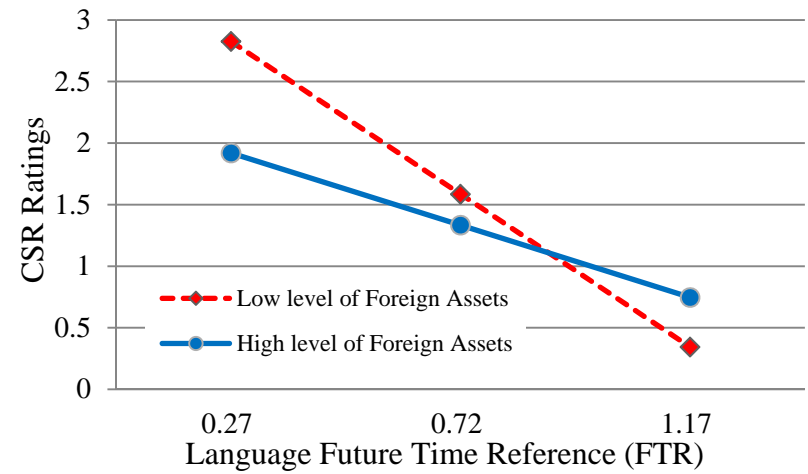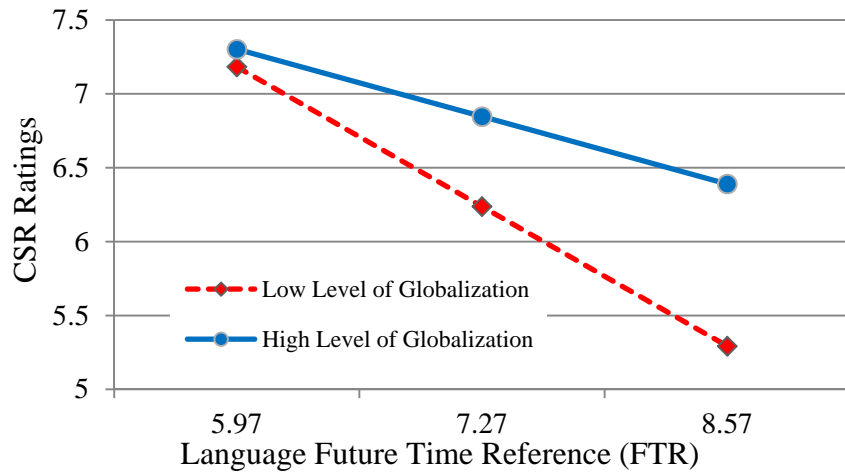
A. Moderating Effects of Country-level Globalization

B. Moderating Effects of Firm-level Internationalization
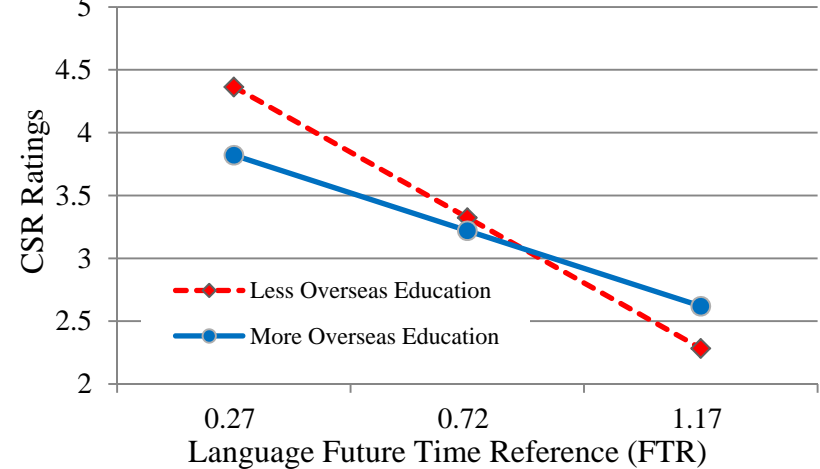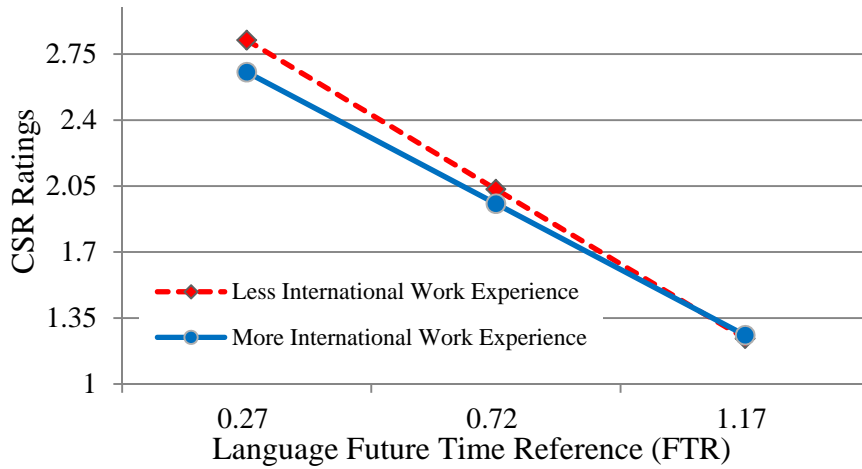
C. Moderating Effects of CEO's International Work Experience

D. Moderating Effects of CEO's Overseas Education Experience

Figure 1. The Effects of Language FTR and Moderators on CSR

Table 1. Descriptive Statistics

Panel A. Pearson Correlation Coefficients between Country Sustainability, CSR Ratings, and FTR

	MSCI IVA rating	RiskMetrics EcoValue21 rating	RiskMetrics Social rating	Language FTR (Strong)
Overall Country Score	0.29***	0.23***	0.26***	-0.20***
Country Environmental Responsibility	0.21***	0.24***	0.20***	-0.17**
Country Institutional Responsibility	0.28***	0.21***	0.25***	-0.12
Country Social Responsibility and Solidarity	0.26***	0.20***	0.24***	-0.28***

Panel B. Summary Statistics of Key Variables

Key Variables	N	Mean	Median	Std. Dev	Minimum	Maximum
FTR	90529	0.72	1	0.45	0	1
Rule of law	90291	1.52	1.55	0.34	-0.95	2.04
English legal origin	90529	0.63	1	0.48	0	1
Ln(GDP per capita)	90127	10.47	10.51	0.36	6.47	11.65
Globalization index	88043	78.60	77.49	8.78	35.65	92.72
% Foreign assets	57299	25.43	17.43	26.03	0	100
% Largest owner shares	44669	25.12	10.21	30.90	0.34	100
Tobin's Q (winsor)	76417	2.82	2.25	1.87	0.79	8.04
ROA	74993	0.05	0.04	0.07	-1.81	2.86
CEO gender	74996	0.98	1	0.12	0	1
CEO international work	74998	0.44	0	0.50	0	1
CEO overseas education	74986	0.20	0	0.40	0	1
Power distance	89948	43.11	40	11.41	11	104
Individualism	89948	75.76	89	19.74	13	91
Masculinity/femininity	89948	62.27	62	18.16	5	95
Uncertainty avoidance	89948	55.16	46	21.15	8	112
Long-term orientation	88397	38.05	29	19.51	0	96
Interest coverage (winsor)	73948	17.09	5.97	29.41	0.21	122.82
Financial constraints	62076	0.28	0.01	10.64	-2527.67	95.84
Slack	63342	1.72	1.36	1.57	0.04	184.98

* p< 0.1, ** p<0.05, *** p< 0.01.

Table 2. Correlations of Independent Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
FTR	1.00																			
Rule of law	-0.00	1.00																		
English legal origin	0.72*	0.29*	1.00																	
Ln(GDP per capita)	0.02*	0.62*	0.16*	1.00																
Globalization index	0.29*	0.51*	0.16*	0.15*	1.00															
% Foreign assets	-0.19*	0.11*	-0.24*	-0.00	0.24*	1.00														
% Largest owner shares	-0.08*	0.01*	-0.08*	-0.15*	0.21*	0.07*	1.00													
Tobin's Q (winsor)	0.15*	0.06*	0.17*	0.04*	0.09*	0.03*	-0.03*	1.00												
ROA	0.07*	0.02*	0.10*	0.07*	0.01*	-0.00	-0.04*	0.41*	1.00											
CEO gender	-0.03*	-0.04*	-0.05*	-0.03*	-0.03*	0.00	0.02*	0.01*	-0.02*	1.00										
CEO intl. work	-0.15*	-0.00	-0.26*	-0.11*	0.24*	0.30*	0.22*	-0.02*	-0.04*	-0.02*	1.00									
CEO overseas edu.	-0.10*	-0.04*	-0.10*	-0.14*	0.08*	0.15*	0.08*	-0.01*	-0.03*	0.02*	0.31*	1.00								
Power distance	-0.15*	-0.65*	-0.39*	-0.47*	-0.45*	-0.02*	0.04*	-0.12*	-0.02*	0.04*	0.09*	0.12*	1.00							
Individualism	0.65*	0.44*	0.69*	0.41*	0.41*	-0.14*	-0.15*	0.18*	0.08*	-0.05*	-0.21*	-0.22*	-0.66*	1.00						
Masculinity/femininity	-0.16*	-0.19*	-0.02*	0.05*	-0.64*	-0.20*	-0.09*	-0.10*	-0.04*	0.02*	-0.16*	-0.06*	0.15*	-0.18*	1.00					
Uncertainty avoidance	-0.43*	-0.50*	-0.77*	-0.20*	-0.53*	0.04*	-0.05*	-0.16*	-0.10*	0.06*	0.09*	0.07*	0.59*	-0.61*	0.38*	1.00				
Long-term orientation	-0.71*	-0.36*	-0.54*	-0.16*	-0.73*	0.01	0.03*	-0.18*	-0.06*	0.04*	0.06*	0.12*	0.58*	-0.81*	0.49*	0.60*	1.00			
Interest coverage	-0.17*	-0.06*	-0.09*	0.04*	-0.24*	-0.05*	-0.04*	0.23*	0.39*	-0.01*	-0.01*	-0.02*	0.09*	-0.15*	0.19*	0.14*	0.24*	1.00		
Financial constraints	-0.01*	-0.00	-0.01*	-0.00	0.00	0.00	0.01*	-0.00	0.00	0.00	0.01	0.01	0.01*	-0.01*	0.01*	0.00*	0.01*	0.01*	1.00	
Slack	-0.03*	0.01*	0.03*	0.04*	-0.08*	-0.04*	0.03*	0.05*	0.10*	0.02*	-0.01*	0.05*	-0.02*	0.00	0.06*	-0.01*	0.05*	0.37*	0.06*	1.00

* p< 0.05

Table 3. GLS Regression on the Determinants of CSR: Intangible Value Assessment (IVA) Ratings

DV = IVA ratings	(1)		(2)		(3)		(4)		(5)		(6)	
Language effect												
FTR	-1.577***	(0.355)	-6.434***	(1.648)	-2.747***	(0.727)	-1.750**	(0.782)	-2.069***	(0.697)	-5.946***	(1.656)
FTR×Globalization			0.062***	(0.019)							0.050***	(0.019)
FTR×Foreign assets					0.028***	(0.009)					0.016*	(0.009)
FTR×CEO intl. work							0.210	(0.508)			-0.605	(0.489)
FTR×CEO overseas edu									1.236***	(0.629)	0.814	(0.645)
Economic development												
Globalization index	0.097**	(0.039)	-0.010	(0.054)	0.095***	(0.038)	0.096**	(0.040)	0.101***	(0.038)	0.018	(0.049)
Rule of law	0.034	(0.304)	1.224	(0.710)	0.182	(0.661)	0.071	(0.697)	0.089	(0.682)	0.995	(0.662)
Legal origin (residual)	0.798	(1.384)	-2.190	(1.547)	0.442	(1.339)	0.746	(1.413)	0.775	(1.372)	-1.649	(1.424)
Ln(GDP per capita)	-0.293	(0.371)	-0.576	(0.371)	-0.286	(0.366)	-0.291	(0.369)	-0.234	(0.369)	-0.482	(0.372)
Firm structure & performance												
% Foreign assets	0.001	(0.003)	-0.000	(0.003)	-0.025***	(0.009)	0.001	(0.003)	0.001	(0.003)	-0.014*	(0.008)
% Largest owner shares	-0.003	(0.003)	-0.003	(0.003)	-0.003	(0.003)	-0.003	(0.003)	-0.003	(0.003)	-0.003	(0.003)
Tobin's Q (winsorized)	0.063	(0.044)	0.054	(0.043)	0.064	(0.043)	0.062	(0.044)	0.068	(0.043)	0.061	(0.043)
ROA	2.660*	(1.362)	2.769**	(1.380)	2.889**	(1.337)	2.667**	(1.360)	2.718**	(1.338)	2.899**	(1.354)
CEO backgrounds												
Gender	-0.465	(0.823)	-0.488	(0.821)	-0.476	(0.826)	-0.460	(0.822)	-0.486	(0.821)	-0.518	(0.825)
International work	-0.035	(0.167)	-0.081	(0.163)	-0.047	(0.165)	-0.228	(0.481)	-0.040	(0.166)	0.477	(0.453)
Overseas education	0.027	(0.229)	0.091	(0.226)	0.102	(0.230)	0.033	(0.229)	-1.021*	(0.605)	-0.587	(0.619)
Hofstede cultural dimensions												
Power distance	0.042	(0.029)	0.008	(0.031)	0.042	(0.029)	0.042	(0.029)	0.048*	(0.028)	0.018	(0.029)
Individualism	0.014	(0.015)	0.020	(0.014)	0.014	(0.015)	0.014	(0.015)	0.017	(0.014)	0.024*	(0.013)
Masculinity/Femininity	0.024**	(0.011)	0.018*	(0.011)	0.024**	(0.011)	0.024**	(0.011)	0.027**	(0.012)	0.019	(0.012)
Uncertainty avoidance	0.014	(0.017)	-0.015	(0.020)	0.014	(0.017)	0.013	(0.018)	0.015	(0.017)	-0.008	(0.019)
Long term orientation	-0.033*	(0.018)	-0.021	(0.017)	-0.033**	(0.018)	-0.034*	(0.018)	-0.036*	(0.019)	0.021	(0.017)
Controls												
Interest coverage	0.002	(0.003)	0.001	(0.003)	0.002	(0.003)	0.002	(0.003)	0.001	(0.003)	0.001	(0.003)
Financial constraints	0.006	(0.009)	0.009	(0.009)	0.006	(0.009)	0.006	(0.009)	0.002	(0.009)	0.006	(0.009)
Slack	-0.191**	(0.075)	-0.191**	(0.076)	-0.191**	(0.075)	-0.191**	(0.076)	-0.205**	(0.081)	-0.208**	(0.083)
Constant	-3.561	(5.505)	8.452	(7.160)	-3.561	(5.505)	-3.289	(5.636)	-4.788	(5.266)	4.980	(6.442)
Industry fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
Adj. R-squared	21.9%		23.2%		22.8%		21.9%		22.6%		23.9%	

N = 9756. Standard errors are clustered at the firm-level and reported in parentheses. * p< 0.1; ** p < 0.05; *** p < 0.01

Table 4. GLS Regression on the Determinants of CSR: RiskMetrics Environmental Ratings

DV = EcoValue rating	(1)		(2)		(3)		(4)		(5)		(6)	
Language effect												
FTR	-1.252*	(0.690)	-5.581***	(1.303)	-2.018***	(0.781)	-1.435**	(0.789)	-1.673**	(0.721)	-5.030***	(1.285)
FTR×Globalization			0.055***	(0.015)							0.047***	(0.016)
FTR×foreign assets					0.019***	(0.010)					0.005	(0.009)
FTR×CEO intl. work							0.242	(0.480)			-0.595	(0.560)
FTR×CEO overseas edu									1.094**	(0.491)	0.903*	(0.550)
Economic development												
Globalization index	0.014	(0.016)	-0.059	(0.049)	0.044	(0.031)	0.045	(0.032)	0.047	(0.031)	-0.037	(0.047)
Rule of law	-0.057	(0.603)	1.236*	(0.718)	0.087	(0.597)	0.002	(0.605)	0.069	(0.591)	1.039	(0.688)
Legal origin (residual)	-0.430	(1.024)	-3.731**	(1.484)	-0.848	(0.986)	-0.555	(1.029)	-0.726	(0.940)	-3.283**	(1.434)
Ln(GDP per capita)	-0.040	(0.375)	-0.231	(0.356)	-0.066	(0.363)	-0.033	(0.370)	0.034	(0.350)	-0.167	(0.353)
Firm structure & performance												
% Foreign assets	0.005*	(0.003)	0.005	(0.003)	-0.013	(0.009)	0.005*	(0.003)	0.005*	(0.003)	0.0004	(0.009)
% Largest owner shares	-0.007**	(0.003)	-0.007***	(0.003)	-0.007**	(0.003)	-0.007**	(0.003)	-0.007***	(0.003)	-0.007***	(0.003)
Tobin's Q (winsorized)	0.104***	(0.039)	0.106***	(0.003)	0.106***	(0.039)	0.105***	(0.039)	0.109***	(0.039)	0.110***	(0.039)
ROA	1.529	(1.146)	1.712	(1.182)	1.586	(1.127)	1.541	(1.143)	1.623	(1.136)	1.747	(1.169)
CEO backgrounds												
Gender	-0.979	(0.634)	-0.991	(0.642)	-0.982	(0.635)	-0.973	(0.634)	-0.993	(0.633)	-1.016	(0.639)
International work	0.139	(0.154)	0.115	(0.152)	0.121	(0.154)	-0.086	(0.469)	0.143	(0.153)	0.669	(0.533)
Overseas education	-0.002	(0.184)	0.061	(0.183)	0.045	(0.182)	0.010	(0.186)	-0.933**	(0.473)	-0.733	(0.528)
Hofstede cultural dimensions												
Power distance	0.044	(0.029)	0.009	(0.032)	0.038	(0.028)	0.043	(0.029)	0.045*	(0.027)	0.017	(0.031)
Individualism	0.018	(0.017)	0.025	(0.017)	0.023	(0.016)	0.018	(0.017)	0.021	(0.016)	0.027*	(0.016)
Masculinity/Femininity	0.018	(0.012)	0.015	(0.012)	0.012	(0.011)	0.018	(0.012)	0.021*	(0.012)	0.017	(0.012)
Uncertainty avoidance	-0.007	(0.015)	-0.039**	(0.019)	-0.011	(0.015)	-0.008	(0.015)	-0.009	(0.014)	-0.033*	(0.019)
Long term orientation	0.000	(0.018)	0.010	(0.018)	0.005	(0.017)	-0.0001	(0.018)	0.0001	(0.018)	0.012	(0.017)
Controls												
Interest coverage	-0.005*	(0.003)	-0.006**	(0.003)	-0.005*	(0.003)	-0.005*	(0.003)	-0.005*	(0.003)	-0.006**	(0.003)
Financial constraints	0.015	(0.015)	0.016	(0.015)	0.015	(0.014)	0.015	(0.014)	0.011	(0.014)	0.013	(0.015)
Slack	-0.167***	(0.063)	-0.165***	(0.063)	-0.177***	(0.065)	-0.167***	(0.063)	-0.179***	(0.065)	-0.180***	(0.066)
Constant	-2.354*	(5.330)	8.492	(6.582)	-0.993	(5.183)	-2.009*	(5.314)	-3.337	(4.879)	5.559	(6.445)
Industry fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
Adj. R-squared	19.2%		20.2%		19.5%		19.2%		19.7%		20.5%	

N = 19936. Standard errors are clustered at the firm-level and reported in parentheses. * p< 0.1; ** p < 0.05; *** p < 0.01

Table 5. GLS Regression on the Determinants of CSR: RiskMetrics Social Ratings

DV = Social rating	(1)		(2)		(3)		(4)		(5)		(6)	
Language effect												
FTR	-1.246**	(0.582)	-4.733***	(1.457)	-2.010***	(0.659)	-1.363**	(0.637)	-1.545**	(0.546)	-4.336***	(1.436)
FTR×globalization			0.045***	(0.017)							0.038**	(0.017)
FTR×foreign assets					0.020**	(0.008)					0.011	(0.008)
FTR×CEO intl. work							0.154	(0.447)			-0.542	(0.482)
FTR×CEO overseas edu									0.890*	(0.546)	0.530	(0.604)
Economic development												
Globalization index	0.065**	(0.032)	-0.024	(0.048)	0.061*	(0.032)	0.064*	(0.034)	0.064**	(0.033)	-0.006	(0.044)
Rule of law	0.145	(0.568)	1.194*	(0.664)	0.295	(0.588)	0.182	(0.601)	0.264	(0.613)	1.043*	(0.630)
Legal origins (residual)	0.327	(1.000)	-2.386*	(1.376)	-0.116	(1.064)	0.253	(1.093)	0.083	(1.099)	-2.063	(1.300)
Ln(GDP per capita)	-1.257	(0.365)	-0.326	(0.353)	-0.131	(0.353)	-0.124	(0.362)	-0.085	(0.347)	-0.279	(0.345)
Firm structure & performance												
% Foreign assets	0.002	(0.003)	0.002	(0.003)	-0.016**	(0.008)	0.002	(0.003)	0.002	(0.003)	-0.008	(0.008)
% Largest owner shares	-0.003	(0.002)	-0.004	(0.002)	-0.003	(0.002)	-0.003	(0.002)	-0.004	(0.002)	-0.004	(0.002)
Tobin's Q (winsorized)	0.063	(0.042)	0.061	(0.042)	0.064	(0.042)	0.063	(0.042)	0.067	(0.041)	0.065	(0.041)
ROA	2.988**	(1.276)	3.188**	(1.311)	3.157**	(1.258)	3.007**	(1.279)	3.102**	(1.269)	3.246**	(1.296)
CEO backgrounds												
Gender	-0.901	(0.743)	-0.915	(0.741)	-0.909	(0.740)	-0.897	(0.742)	-0.912	(0.740)	-0.937	(0.740)
International work	-0.026	(0.167)	0.051	(0.163)	-0.037	(0.165)	0.168	(0.420)	-0.028	(0.166)	0.444	(0.444)
Overseas education	0.143	(0.207)	0.204	(0.207)	0.201	(0.207)	0.149	(0.208)	-0.611	(0.530)	-0.245	(0.588)
Hofstede cultural dimensions												
Power distance	0.034	(0.024)	0.003	(0.027)	0.029	(0.024)	0.033	(0.025)	0.035	(0.024)	0.008	(0.026)
Individualism	0.009	(0.014)	0.014	(0.013)	0.014	(0.013)	0.009	(0.014)	0.012	(0.013)	0016	(0.013)
Masculinity/Femininity	0.020*	(0.011)	0.017	(0.011)	0.015	(0.010)	0.020*	(0.010)	0.022**	(0.011)	0.017	(0.011)
Uncertainty avoidance	0.010	(0.015)	-0.016	(0.018)	0.005	(0.015)	0.009	(0.015)	0.008	(0.015)	-0.012	(0.017)
Long term orientation	-0.029*	(0.016)	-0.019	(0.015)	-0.024	(0.016)	-0.029*	(0.016)	-0.029*	(0.016)	-0.017	(0.015)
Controls												
Interest coverage	0.0002	(0.003)	-0.001	(0.003)	-0.0002	(0.003)	0.0001	(0.003)	-0.0003	(0.003)	-0.001	(0.003)
Financial constraints	0.009	(0.014)	0.010	(0.009)	0.009	(0.008)	0.008	(0.008)	0.005	(0.008)	0.008	(0.008)
Slack	-0.162**	(0.075)	-0.160**	(0.075)	-0.169**	(0.078)	-0.161**	(0.075)	-0.170**	(0.078)	-0.171**	(0.079)
Constant	-1.664	(5.126)	7.937**	(6.482)	-0.509	(5.045)	-1.426	(5.322)	-2.209	(4.860)	5.822	(5.973)
Industry fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes		Yes		Yes	
Adj. R-squared	20.1%		21.0%		20.6%		20.1%		20.5%		21.3%	

N = 12522. Standard errors are clustered at the firm-level and reported in parentheses. * p< 0.1; ** p < 0.05; *** p < 0.01

APPENDIX A: Language Origins and Future-Time Reference (FTR) Values

Country	Language	Genus	FTR	Obs.	Country	Language	Genus	FTR	Obs.
Australia	English	Germanic	Strong	2,877	Mexico	Spanish	Romance	Strong	239
Austria	German	Germanic	Weak	370	Morocco	Arabic	Semitic	Strong	3
Belgium	Flemish/French	Germanic/Romance	Weak/Strong	680	Netherlands	Dutch	Germanic	Weak	1,496
Bermuda Islands	English	Germanic	Strong	283	New Zealand	English	Germanic	Strong	256
Brazil	Portuguese(BR)	Romance	Weak	426	Norway	Norwegian	Germanic	Weak	485
Canada	English/French	Germanic	Strong	3,347	Pakistan	Urdu/English	Indic/Germanic	Strong	4
Cayman Islands	English	Germanic	Strong	101	Papua New Guinea	English	Germanic	Strong	21
Chile	Spanish	Romance	Strong	46	Peru	Spanish	Romance	Strong	1
China	Mandarin	Chinese	Weak	181	Philippines	Tagalog/English	Meso-Philippine/Germanic	Strong	28
Colombia	Spanish	Romance	Strong	3	Poland	Polish	Slavic	Strong	194
Cyprus	Greek/Turkish	Greek/Turkic	Strong	5	Portugal	Portuguese(EU)	Romance	Strong	451
Czech Republic	Czech	Slavic	Strong	124	Puerto Rico	Spanish/English	Romance/Germanic	Strong	32
Denmark	Danish	Germanic	Weak	843	Romania	Romanian	Romance	Strong	23
Egypt	Arabic	Semitic	Strong	17	Russia	Russian	Slavic	Strong	227
Finland	Finnish	Finnic	Weak	927	Singapore	English	Germanic	Strong	740
France	French	Romance	Strong	3,660	South Africa	Afrikaans	Germanic	Strong	167
Germany	German	Germanic	Weak	2,779	Spain	Spanish/Catalan	Romance	Strong	1,610
Greece	Greek	Greek	Strong	554	Sweden	Swedish	Germanic	Weak	1,600
Hong Kong, China	Cantonese	Chinese	Weak	1,447	Switzerland	French/German/Italian	Romance/Germanic	Strong/Weak	3,184
Hungary	Hungarian	Ugric	Strong	95	Taiwan, China	Mandarin/Hakka	Chinese	Weak	156
India	Hindi/English	Indic/Germanic	Strong	150	Thailand	Thai	Kam-Tai	Strong	82
Indonesia	Indonesian	Sundic	Weak	34	Turkey	Turkish	Turkic	Strong	109
Ireland	Irish/English	Celtic/Germanic	Strong	892	United Arab Emirates	Arabic	Semitic	Strong	1
Israel	Hebrew/Arabic	Semitic	Strong	78	United Kingdom	English	Germanic	Strong	14,203
Italy	Italian	Romance	Strong	2149	United States	English	Germanic	Strong	31,819
Japan	Japanese	Japanese	Weak	11,270	British Virgin Islands	English	Germanic	Strong	1
Korea, South	Korean	Korean	Strong	466	Guernsey	French/English	Romance/Germanic	Strong	87
Luxembourg	Luxembourgish	Germanic	Weak	145	Gibraltar	English	Germanic	Strong	23
Macao, China	Chinese/Portugese	Chinese/Romance	Weak	2	Jersey	French/English	Romance/Germanic	Strong	26
Malaysia	Malay	Sundic	Weak	154	**(Total: 59 countries)**				91,373

APPENDIX B. Descriptions of Variables

A. *Language Effects*

Future-Time Reference (FTR)
FTR is a dummy variable which equals 1 if the language is a strong-FTR language, and equals 0 if is it a weak-FTR language. For a complete classification of the languages in our sample, see Appendix 1. Data on FTR are from Dahl (2000) and Chen (2013).

B. *Economic Development*

Rule of Law
To control for the potential institutional channels that can influence CSR, we control for Rule of Law (as a proxy for legal origins because legal origins are highly correlated with languages due to the history of colonization [La Porta et al., 1998]). The data on *Rule of Law* are obtained from World Bank's World Development Research database.

Legal Origin
The legal origin of the company law or commercial code of each country in which the focal firm is headquartered. This dummy variable equals one if the country's legal origin is the English common law, and zero otherwise. Data on legal origins are from La Porta et al. (1998).

GDP Per Capita
To control for the national wealth and income effects on CSR, we include the logarithm of GDP per capita of the country. The data on GDP per capita are obtained from the World Bank.

Globalization Index
To control for the spillover and convergence of international CSR standards across countries, as well as how open the domestic environment in which the firm operates is, we include the KOF Index of Globalization obtained from ETH Zurich. The KOF Index of Globalization measures three main dimensions of globalization: economic, social, and political. In addition to these three dimensions, the overall index is calculated by referring to (1) actual economic flows, (2) economic restrictions, (3) data on information flows, (4) data on personal contact, and (5) data on cultural proximity, as in Dreher (2006).

C. *Firm Structure and Performance*

% Foreign Assets/Total Assets (Degree of Internationalization)
Similar to the positive effects of globalization at the country-level, the degree of internationalization at the firm-level can also serve as a moderator variable. Following Carpenter, Sanders, & Gregersen (2001), we measure the degree of internationalization as the ratio of a company's foreign assets (reflecting foreign productions) to its total assets. The asset dimension addresses a firm's dependence on foreign consumer markets and productive resources. Data on the firm-level degree of internationalization are from Worldscope (accessed via Datastream).

Largest Shareholders' Ownership
To control for the impact of the shareholders (the shareholder-stakeholder trade off in corporate decision making), we include the most recent percentage ownership of the company's largest shareholders. Data on this variable are from Orbis database.

Tobin's Q
To control for the financial performance of the firm, which has been shown to affect CSR levels (Margolis, Elfenbein, & Walsh, 2007), we include Tobin's Q as a market-based performance indicator in the regressions. We measure Tobin's Q as the ratio of a firm's market capitalization to its book value of equity, and obtain the data from Datastream.

Return on Assets (ROA)
To control for the operational performance of the firm, which has been shown to affect CSR levels (Margolis, Elfenbein, & Walsh, 2007), we further include ROA as an accounting-based performance indicator in the regressions. We measure ROA as the ratio of a firm's net income to its total book value of assets, and obtain the data from Compustat.

D. *CEO Background*

CEO Gender
To control for the gender effect of top executives on CSR as documented in some studies (e.g., Marquis & Lee, 2013), we include a dummy variable CEO gender, which equals one if the CEO of the company is male, and equals zero if the CEO is female. The data on CEO gender are manually collected across companies and years from BoardEx.

CEO International Work Experience	To control for the potential effect of CEO's international exposure and global mindset on CSR, we include a dummy variable CEO international work experience, which equals one if the CEO of the company worked in a country other than the current company's nationality, and equals zero otherwise. The data on CEO international work experience are manually obtained from BoardEx.
CEO Overseas Education Experience	Similar to CEO international work experience, we further obtain a dummy variable CEO overseas education, which equals one if the CEO obtained educational degrees overseas, and zero otherwise. This variable further controls for the potential effect of top executives' global mindset on CSR performance. The data on CEO overseas education are manually collected from BoardEx.

E. Cultural Dimensions

Hofstede Power Distance Index	"Power distance" deals with the fact that all individuals are not equal and is defined as ***the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally.*** The concept captures whether or not a society's inequality is endorsed by the followers as much as by the leaders. A higher score signifies a large power distance between individuals.
Hofstede Individualism Index	Individualism is ***the degree of interdependence a society maintains among its members*** and defines people´s self-image in terms of "I" or "We". In individualist societies, people are supposed to look only after themselves and their direct family whereas in collectivist societies people belong to 'in groups' that take care of them in exchange for loyalty. A higher score indicates more individualism in society.
Hofstede Masculinity/ Femininity Index	A high score on the Masculinity/Femininity dimension indicates that a masculine society is driven by competition, achievement and success, with success being defined by the "winner" or "best-in-the-field." This value system starts in school and continues throughout one's life – both in work and leisure pursuits. A low score means that the dominant values in the feminine society consist of caring for others and quality of life. A feminine society is one where quality of life is the sign of success and standing out from the crowd is not admirable. ***The fundamental issue here is what motivates people, wanting to be the best (masculine) or liking what you do (feminine).***
Hofstede Uncertainty Avoidance Index	Uncertainty avoidance represents how a society deals with the fact that the future is uncertain: should one try to control the future or just let it happen? This ambiguity brings with it anxiety and different cultures have learnt to deal with this anxiety in different ways. ***The extent to which the members of a culture feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these*** is reflected in the UAI score. A higher score implies a higher level of uncertainty avoidance.
Hofstede Long-term Orientation Index	Long term orientation is closely related to the teachings of Confucius and can be interpreted as dealing with society's search for virtue, ***the extent to which a society shows a pragmatic future-oriented perspective rather than a conventional historical short-term point of view.***
Catholic/Protestant	To control for the impact of religion on CSR, we include the ratio of the percentage of Catholic population and the percentage of the Protestant population in the country in the subsample of Christianity-majority countries. Data on this variable are from the Global Religious Landscape Report and the International Religious Freedom Report.

F. Controls (Financial Constraints)

Interest Coverage	Measured by the ratio of Earnings Before Interests and Taxes (EBIT) to interest expenses. Data on interest coverage are from Compustat.
Financial Constraints	Measured by the ratio of the change in short-term investment to the change in operational cash flow. Data on financial constraints are from Compustat.
Slacks (Current Ratio)	Measured by the ratio of current debts to current assets. Data on slacks (current ratio) are from Compustat.