The Contribution of Semiotics to Translation
Asst. Prof. Ali K. Abbas (PhD)
Al-Turath University College
Department of English

مساهمة علم الاشارة في اغناء الترجمة

الاستاذ المساعد علي خضير عباس

مستخلص

يسعى هذا البحث الى مقاربة النص اللغوي مقاربة سيمائية مسترشدا بأدوات واليات التحليل التي ابتدعها علم اللسانيات.

يهدف البحث الى استطلاع علاقة السيمائيات العامة بالترجمة كعلاقة العلامة والنص وابعادهما التركيبية والدلالية والتداولية بترجمة النص المعني. من رواد علم السيمائيات شارلز موريس اذ يرى السيمائيات "العلم الذي ينسق العلوم الأخرى، ويدرس الأشياء أو خصائص الأشياء في توظيفها للعلامات، ومن ثم فالسيمائيات هي آلة كل العلوم (علم العلوم)، لأن كل علم يستعمل العلامة، وتظهر نتائجه لاحقا طبقا للعلامات, ووفقا لطبيعتها التواصلية باعتبارها ناقل للمعلومات من اجل ما يعتبر علما واصفا لكل العلوم. يستند موريس على ما يعتقده دوسوسير بان "اللغة نظام من العلامات التي تعبر عن الأفكار."

من محددات نجاح وظيفة العلامة التواصلية البحث عن مقاصد المرسل و البحث عن مقاصد النص و البحث عن مقاصد المتلقي وهذا يشير الى امكانية تحول العلامة اللسانية في سياق معين، إلى علامة ذات دلالة مركبة، يتحول مدلولها إلى دال، باحثاً عن مدلول آخر.

تخلص هذه الدراسة على تسليط الضوء على قدرة السيمائيات اغناء ترجمة النص بمدلولات تتحمل تأويلات متنوعة وفقا لمقاصد المرسل وتفسيرات المتلقي.

Abstract

The aim of this article is to explore avenues whereby semiotics is deployed as an aid to ameliorate translation quality assessment. The key question is whether semiotics and translation compete to be the starting point to furnish the way for the other to achieve the communicative act. It has become quite obvious that semiotics, the study of the sign system, aspires to inculcate the spirit of the practical use of signs in translation practice. Consequently semiotics can be considered as a portal through which translation strategies and methods operate properly for effective communication.

The semantics and pragmatics of signs help form images of object representations in the world in people's minds. The images that the objects representations (interpretations) evoke in people's minds are not necessarily to be exactly the same. The variance of imagery is due to people's life experience and their background information. Semiotics in essence investigates how meaning is achieved through the sign system and ultimately fosters translation practice to help achieve its communicative act. Semiotics and translation are not mutually exclusive for that they share a symbiotic relationship, namely they scrutinize the same factors of influence on successful communication- the intents of sender, the intents of medium, the intents of receptor(s). Among pioneering scientists who laid down the principles of semiotics were de Saussure and C. Peirce. They studied language as a system of signs with interrelated relationships to be the source of inspiration for other sciences.

Key Words: Semiotics, Signs, Signified, Translation, imagery, communication

"...سيماهم في وجوههم من اثر السجود"

سورة الفتح اية 29

"Their mark (sign) is on their faces from the trace of prostration"

Introduction

Translation, being a staple of everyday communicative life, is fundamentally associated with semiotics and together have become a topic of sustained investigation within philosophy, psychology, linguistics and many other scholarly disciplines.

Much research has been done on such association targeting a meticulous characterization of the normative structure underlying their live practice. Translation theoreticians and semiotics theorists have been trying to bring translation and semiotics within their ecological niche. The significance of the contribution of semiotics has been illuminated for the excellency of the translator to render the text concerned.

According to a very broad definition, language is simply a signaling system, in a sense that it is made up of signs existing as objects in the physical world which in turn evoke certain images in the language users' minds. The best explication of this conception is the icon inscribed in the epigraph above which reifies the mental image having an emotional and a social meaning to signify piety- religious commitment. This mark that appears on the forehead of the people concerned due to prostration clearly implies the traces of the fear of Allah, munificence, nobility and goodness of manner. Semiotics studies, within the sign system, the signs (facial expressions) that distinguish the face of a righteous and well-mannered person from that of a vain and arrogant person.

The sign, a word the most accessible one, represented in its graphemes (letters) or phonemes (speech sounds)- is composed, originally in de Saussure'

terms, of the signifier- corresponding to the form of an object in the world- and the signified- the meaning it represents. Signs are clues that enable hearers to make inferences of what speaker intends to convey. Often, speakers use language unequivocally prompting readers to elicit the desired meaning they aim at. A sign may be construed as a message, with a variety of aims. Suppose we notice that someone bows deeply before another; It may be taken to mean obedience, contorting to stomachache, or looking for something being lost. So far we acknowledge a grasp of how such signs be transformed into a text. As a corollary, sings come in a system; they are combined in a way parallel to the structure of a text since a text is a blend of structures. Both serve the same goal- communication

Basic Perspectives

Signs vary in form and scope ranging from request and welcome signs to warning signs. Some of them are required by law represented by mandatory words and colors (red, for example). Others are required by individuals; all of them thus have a message and an intended audience. Language users themselves determine their audience and the message. They need to be clear about their use of sings which signal to what they are trying to say.

Language does not operate in a vacuum, but definitely in a cultural setting. Language practices lead to maintenance of culture and consequently construct the world. Translation draws upon this type of construct which in essence is the outcome of cultures interactions. To a more extremist envision translation produces a culture.

De Saussure's two-side model of sign has been criticized and refined; so as a result, different models of sign emerged in semiotics; a three-fold model of sign with the heading of triangle of reference (Peircian triangle) subsuming three parts- symbol, referent (object), thought of reference. (See Rudi Keller, C. K. Ogden and I. A. Richards)

In the process of communication the symbol acts as the starting point denoting a certain object (referent) in the world, which together with the symbol combine to help interpret the thought of reference. These two cycles are intertwined by their semantics (the relation between symbols and the objects they refer to) and their syntactics (the relation between signs' formal structures). These two, the symbol and the object, give way to form their image in our minds. Such mental images are not exactly the same due to the fact that language users differ in their life experiences and their views of the world. Therefore their interpretation of the ideational component is different arising from their understanding of the world. The symbol and referent (object) of the triangle trigger different interpretations. This represents the pragmatics of the communicative act- the relation between signs and interpreters. This pragmatic industry makes semiotics distinct from the tradition Saussurean semiology which is a part of it

A Brief Historical Account

Semiotics dates back to Latin traditions denoting the study of signs. Semiotics, like other studies of philosophy investigates the relation between language and logic. Needless to say, It was de Saussure who helped promote semiotics. The surge of interest in semiotics is primarily due to de Saussure who has been the inspiration for semiotics studies. No philosopher of the 19th century is more steeped in the semiotics studies of the period than Charles Sanders Peirce. He dramatically expounded the scope of semiotics followed by Charles Morris who broadened the scope of the term beyond human communication to animal learning involving the use of signals. Thomas A. Sebeok (1994) edited the Encyclopedic Dictionary of Semiotics that can be regarded the first recognizable distinctions of the interrelations between translation and semiotics. Gorlée (2004:103–104) recoins the term of semiotranslation that is "[...] a unidirectional, future-oriented, cumulative, and irreversible process, a growing

network which should be pictured as a single line emanating from a source text toward a designated target text." Among other prominent philosophers who made sustained investigations about the role semiotics could play in translation mechanism are John Locke, R. Jacobson, Chandler, Yuri Lotman and others.

The influence of Peirce was evident and inspired other semiotics scholars to be indulged more in semiotics studies. Hjelmslev (1963:109) contends that "in practice, language is a semiotics into which all other semiotics could be translated." Lotman (1990:143) made astounding remark as he wrote "the fundamental act of thinking is translation." So far, scholars theorized about semiotics and its contribution to translation, notwithstanding the most impressive team was that of the school of Moscow. Semiotics was introduced in English by Henry Stubbes as a branch of medical science studying the function of signs as habitats of the world.

Semiotics and Translation

Semiotics studies signs as a system of communication; a sign carries a meaningful information to be decoded towards a desired meaning. They come in various forms- visual, auditory, tactile, olfactory, or taste. Their interpretation can be global- road sings- or culture- specific, certain bodily gestures. For instance sitting cross leg position is offensive in one culture (Arabic as an example) in another is a sign of virility. Culture specificity involves words expressing emotivity in a sense that some culture-laden words with connotative meanings are problematic to render. In this respect, Sapir asserts that

> No two languages are ever sufficiently similar to be considered as
> representing the same reality. The world in which different societies
> live are distinct worlds, not merely the same world with different labels
> attached." (Sapir cited in Bassnett:2005:2)

This grants support to the fact that some ideas are untranslatable into some languages others have shades of difference.

A translator quite possibly encounters some linguistic concepts that are specifically encoded within a given culture and hardly translated into another language as every language provides special words that reflect ways of living and ways of thinking characteristic of its culture. Translators, therefore, hopefully provide deeper and subtler interpretations of cultural patterns within a given culture. To illustrate, in the context of the Quranic texts and poetic verses , these two thorny areas, with respect to translation, contain many ideas culturally alien to the receptor culture and thus resist translation. In order to boil down such problems, the translator should be well-versed in these text types to produce optimal translation. In addition, certain adjustments need to be made to conform to the receptor culture. This goes in line with the Sapir-Whorf hypothesis stating that "Differences among languages cause differences in the thoughts of their speakers." (Whorf 1956: 36). Among areas that involve culture-specific concepts are the domains of food, ethos (friendly vs. formal, warm vs. stiff), solidarity (formal vs. informal). People of different cultures all over the world use a handshake to greet each other, in addition to other non-verbal behavior: eye contact, touching, conversational distance, facial display,..etc. What matters are the cultural patterns that reflect such types of behavior. For example, people differ in the pattern of handshake as for the length it takes and how firm it needs to be. The firmness is a clue to form an image of character or trustworthiness. The handshake used also shows the intimation of people relationship- how well people know each other. Gender and age are another variants of handshake dependency. Eye contact rules are too operational in the communicative style.

Generally, a sign, being a relation between a number of elements, is viewed differently or similarly by different people. The universe is replete with signs representing certain objects to release a message. In Saussurian belief the sign has a form (the signifier) and meaning (the signified) the relation of which is dyadic established by social convention. What de Saussure ignores is the

pragmatic influence. To this effect, C. S. Pierce adds the third element of influence- the effect of the physical world. The relation is now triadic comprising sign, vehicle (symbol), and the object. Peirce sees these three elements as icon, indices, and symbols. However, these two theories of sign study are based on exclusively different settings- linguistic (more specifically phonological), and philosophical logic.

The structure of the Peirce's triangle is a manifestation of determination in that sign is determined by the object in the world which together are determined by the interpreter counting on the size of experience she has gained. Thus the image of the sign varies in the minds of interpreters, one's collateral experience adds more interpretation to the object which governs the sign. Peirce (1931) writes "Signs require at least quasi minds, a quasi-utterer and a quasi-interpreter. They are welded to help reader get the desired explanation" (523). Nattiez (1990:17) depicts the whole industry of sign system, sign-object-image-as a complex process of creation (the prolific process), the form and the content of the work and the process of reception- the esthetic process that unleash a message. Lotman (1990:143) influenced the field of translation when he made provocative claims, such as "the fundamental act of thinking is translation." and went on as to add that "the fundamental mechanism of translation is dialogue."

Petrilli (2008:19) distinguishes between intersemiotic and endosemiotic translation. The former refers to the translation process between two or more semiotic systems, while the latter is about the internal process in a given semiotic system. Petrilli explains that both types are part of the real world and not only of the world of human culture.

The study of semiotics offered a remarkable contribution to the translation mechanism. It helps decipher translation techniques, its processes especially those of inference on the part of translator. In this context the focus is on both cultural context and linguistic context that entice the translator to be

well acquainted with mysteries of the culture and language of the target text, the translator must be able to mentally process source language phenomena such as ambiguities and discontinuous dependencies (a configuration in which members of a constituent are separated by other elements that are not part of the constituent, e.g. extraposition- (More important is the question of compensation). Therefore the translator must determine which of the possible translation as operative in his attempt. He is supposed to know how words differ in their sense relation in addition to their cultural content bearing in mind that words rarely show absolute synonymy. Words as signs may show various representations in the world to enable the reader to infer the intended meaning- the text to be viewed as a representation of purpose carrying all different aspects of its collective culture. The receiver of the text may attribute meanings entirely different from those aimed at by the senders. The same signal may entail different images in the minds of the senders- different interpretations. To this end Eco (2001:99) prefers forms of interpretation rather than types of translation. More important is his typology of interpretation into interpretation by transcription, intrasystemic interpretation, and intersystemic interpretation. This of course depends on the size of person's knowledge together with their aptitude to be indulged in the culture community

The writer often includes information about what he intends to refer to and such reference is rarely determined by the meaning of the expression. For example the phrase "big liar" can be taken to refer to different people depending on what inferences can be made. In fact we better stress the genealogical inseparability of semiology and translation since both address the same problem of how to faithfully render the intended meaning. Semiotics as a founding discipline can ameliorate translation as effective communication. It can be said that semiotics is the vehicle that has fostered translation to spread and flourish to be cross-cultural medium as well as a means of a natural survival.

We can find parallels between language, translation and semiotics. The key question is of what strategies or methods translators use to overcome the difficulties they encounter; being able to stress the similarities of concepts and social norms to tell whether they are due to coincidence or are inherent in the language system concerned. The translator ought to be competent in the two linguistic as well as cultural complexities of the two texts. The translator should be aware of the text type to translate. Texts can be operative, expressive, and informative (see Reiss 2000:163). Confronted with any text type, the translator may add more information as a stylistic translation technique to make explicit in the target text what remains implicit in the source language. In this respect increased attention to effective communication can be paid as both symptom of and care for lack of social cohesion.

Semiotics provides us with methods to investigate how people worldwide signal to others via gestures. These sign forms are conventionally agreed upon to convey the intended meaning. It is a focus of inquiry to help crystalize the process of representation of the world in people's minds albeit their diverse cultures. Linguists have to bring about a rapprochement between semiotics and translation as two forms of sign system yet placed on a continuum. Semiotics handles signs as a medium where meaning is built up in a way to convey a message. Signs (words) are armed with their inherent features to impart language users with the resulting meaning. A single sign shows the potential for multi interpretations in connection with social milieu. Sturrock (1986:101) refers to "the infinite richness of interpretation which signs are open to." Nida writes "...the production of equivalent messages is a process, not merely matching parts of utterances, but also of reproducing the total dynamic character of the communication." This points to the view that translation is a series of events in congruency with the Peirce's triadic concept of signs which operate in a systematic relation to other adjacent signs. In line with the desideratum that

translation is target-oriented, functional and systematic, semiotics is featured with the same criteria

Presumably, should culture hinders translation semiotics mediates to act as an expedient to better translation. Semioticians and translation theorists hold two slightly different standpoints in that those of translation view semiotics as a research tool but those of semiotics see translation as a semiotic endeavor to transform one semiotic system to another. Stecconi (2004:260) claims that translation is a special form of semiotics to investigate the logico-semiotic conditions of translation: difference, similarity, and mediation. Based on Peirce's categories Stecconi (ibid) divides these conditions into three entities- event, logico-esmiotic condition and norms.

The interaction between translation and semiotics is succinctly seen in their attempt to make cultural transfer possible. Both use, interpret and manipulate messages verbal/nonverbal of two languages. This interaction is accidental in the area of advertisement translation which is a process and a product within the framework of sign system. A sentence is a complex continuation of signs creating mental messages eventually converted to communicative meaning. Preician semiotics can be taken to correspond to Jacobson's three types of translation- intralingual, interlingual, and intersemiotic. Intralingual translation or rewording is a heading of translation by means of other signs of the same language. Interlingual translation (translation proper) is an interpretation of the verbal signs by means of another language. Intersemiotic translation is an interpretation of the verbal signs by means of signs of nonverbal and equivalence between the source and target text. Of pioneering works on this topic is that of Gorlee which help expand translation theorists' views upon translation.

Translation is textually a semiotic act verbal / nonverbal. Human spoken language is only one example- the most expressive- of the most complex sign systems ever known. Nevertheless humans communicate a great deal by various

forms of bodily expressions. Such expressions are organized in a collection to form a sign system. Semiotics embraces the sign system to be a perquisite of translation, yet it faces the challenge of the translation of concepts which are absent in other cultures and consequently lack of equivalence. This translation riddle remains the recurrent question that concerns translatability, equivalence, and fidelity vs. infidelity.

Semiotics and translation are both modes of thought addressing aspects of communication. Signs are deemed as susceptible of being logically described, schematized and formalized for translation process. But this process does not always goes smoothly and often encounters resistance, especially with the translatability of religious texts and poetic texts as they are unique of conventional settings.

Linguistic Semiotics

We are born in a world of sign system that works out our culture. Language is generally deemed as a symbolic sign system. A child at their early age sees what is around as symbols constituting mental images resulting in overgeneralization. The sign system overtime becomes historical construction that gains collective acceptance.

De Saussure aimed to redefine linguistics in a sense that language is a system of interwoven items governed by their relationship to one another. Language is coherently structured to avail itself versatility to assume various functions. In the same streamline signs are semiotically connected to transmit a message, in other words, a coherent semiotic structure is syntactically and semantically and pragmatically described and analyzed. De Saussure views signs as participants in systems defined by differences. De Saussure refers to the two terms 'signifier' and 'signified' as two relational entities. He declares that the meaning of a sign is defined by its relationship to other signs in the group. Signifier and signified are sometimes equated to the dualism of 'form and content'. This indicates that signs always come in systems. For example, in

spoken natural languages utterances are composed of words and words are composed of sounds. This hierarchy of levels gives rise to another hierarchal levels of phonology, morphology, syntax, lexicography and discourse where signs at each level are combined from others at lower levels. The hierarchal organization of complex signs points to the fact that the meaning of a sign resides in the context of the other signs. The importance of context is concretized in the insightful analysis of Peirce's semiotic triangle considering meaning relational and highly context dependent. Peirce sought methods to classify the vicinity with which signs convey their meanings.

The impact of Saussurian ideology evidently prevailed in the anthropology of Levy-Strauss and the deconstructionism of Derrida as well as in the works of Peirce and Morris. Morris viewed a semiotic sign in terms of its syntactic, semantic and pragmatic aspects. The syntactic (syntagmatic) relation is between signs themselves, the semantic (paradigmatic) relation between signs and their denotations and the pragmatic relation is between signs and their interpreters. Translation takes up the same relations as it considers the texts as the product of syntactic, semantic and pragmatic interactive process.

Levy (1969) prefers the illusionistic method of translation against anti-illusionistic method. This is due to his belief that a translation is intended to create illusion in the reader as if he read the original text.

Charles Morris (1970) believes that pragmatics deals with biotic aspects of semiosis with all psychological, biological and sociological phenomena effective in the interpretation of signs. Source texts and target texts are semiotically equivalent if they highly correspond one to the other; both unfold the explicit and implicit intricacies of their cultures.

Social Semiotics

Signs and sign system have to be understood in conjunction with their social knowledge, values, interests, and needs. For instance, to envisage a mental picture of a person, a nation or a social organization, a necessary knowledge

about language, cultural heritage, moralities, history, myths national symbols and rituals, commemorations_is required. To this effect, Volosinov (1973:21) declares that "The sign is part of organized social intercourse and cannot exist, as such, outside it, reverting to a mere physical artifact." Chandler (1994:9) explicates the social character of a sign by saying that "The meaning of a sign is not in its relationship to other signs within the language system but rather in the social context of its use." Semiotics has been studied within its conceptual framework which subsumes semiological tradition- de Saussure, Levi, Strauss, cultural semiotics- Tartu school; the symbolic system of mankind- Lotman; sign interpretation theory – Peirce.

Cultures are replete with various forms of semiotic communication. Semiotics theorists identify many types of codes ranging from verbal language to bodily codes such as physical contact proximately physical orientation, appearance, facial expression, gaze, head nods, gestures, and posture. Signs (gestures) like covering our mouth with our hands is a sign of showing shock or shaking head is a signal of refusal, shrugging shoulders is a signal of indifference. Signs are a potential language that we internalize to better translate ideas. We internalize and sublimate these signals into complex ideas (views). Internalization is how the manifold complexity of signaling is rendered more manageable

A full range of signs including traffic lights, road signs, banners, vehicle graphics, architectural signs, lettering are instrumental in people's life. Advertisers often try to convince businessmen that their sign products tailored to fit their needs and to design and craft their project are to maximize its impact.

Sign systems vary from country to country, from culture to culture, from language community to another. Yet there are similarities throughout. This discrepancy in cultural behavior can be highlighted by considering the two words 'dog' and 'owl' in both Arabic and English languages. The two societies

hold contrasting concepts of these words. In Arabic the two words have a pejorative connotative meaning designating an insult (dog) and stupidity (owl). On the other hand, in English they display a neutral connotative or even a laudable connotative meaning designating loyalty and wisdom respectively. In contrast, we can find certain phenomena that hold similar universally accepted concepts. Consider the phrase 'touch wood' which is used by many cultures as a universal gesture to avoid envy (resentful awareness of an advantage enjoined by someone else with a desire to possess the same advantage (Merriam Webster Dictionary) (bad luck) and hope that a good thing will continue to occur after it has been acknowledged.

Concluding Remarks

Over the past several decades there has been the revival of interest in handling semiotics and translation as interdisciplinary sciences. It is safe to say that semiotics acts as a feedback to translation. Semiotic studies being investigated in this study emphasize the remarkable contribution of semiotics for the excellency of translation quality. The sign system encompasses the world within its horizon. It teaches us reality as a system of signs. Semiotics tells us that we live in a world of sings which are organized into codes conceived of as mechanisms that generate messages.

Human language is structured and enhanced by human experiences and needs, and since word, the basic unit, is a mental image of a sign in the world, translation draws upon this word store to communicate ideas across cultures. Thus, extra attention has been paid to the realization in translation of ideational and interpersonal functions incorporated into a semiotic level of discourse. Semiotics theorists succeeded in their efforts to categorize translation through a semiotic perspective.

REFERENCES

Baker, M. (1998) *Encyclopedia of Translation Studies*. London: Routledge.

Bassnet, Susan 2005 (1980) Translation Studies. London: Methuen & Co.

Chandler D. (1994) *Semiotics for Beginners*. Aberystwyth: University of Wales, Aberystwyth

Derrida, Jacques (1978): *Writing and Difference* (trans. Alan Bass). London: Routledge & Kegan Paul

Eco, U. (2001) *Experiences in translation*. Toronto: University of Toronto Press.

Gorlée, D. (2004). *On translating signs: Exploring text and semiotranslation*. Amsterdam: Rodopi.

Hjelmslev, L. (1963) *Prolegomena to a theory of language*. Madison: University of Wis-consin

Jakobson, R. (1959) "On linguistic aspects of translation". In *On translation*. (ed.) R. A. Brower. Cambridge: Harvard University Press 232–239.

Keller, Rudi (1995) Expression and meaning. A theory of linguistic signs. Trans. Kim Berley Duenwald. New York: OUP 87-95

Lévi-Strauss, Claude ([1949] 1969): *The Elementary Structures of Kinship* (trans. James Harle Bell, John Richard von Sturmer & Rodney Needham). London: Eyre & Spottiswoode

Lotman, Y. (2005/1990). "On the semiosphere." *Sign Systems Studies* 33 (1): 205–229.

Morris, Charles W. (1970) Foundations of the Theory of Signs. Chicago. Chicago University Press.

Munday, J. (2004) *Introducing translation studies. Theories and applications* London:Routledge

Nida, E.-A., and C.-R. Taber. 2003. The theory and practice of translation. Leiden: Brill.

Ogden, C.K. and I. A. Richards (1923) The meaning of meaning. London: Routledge and Kegan Paul.

Peirce, C. S. (1931–1948) *Collected papers*. Cambridge: Harvard University Press.

Petrilli, S. (2008) The biosemiotics of plantcommunication. American Journal for Semiotic Studies 24: 39–56.

Reiss Katharina (2000) "type, kind, and individuality of text: decision making in translation" in Venuti, Lawrence (ed.) The Translation studies Reader. London: Routledge. 161-71.

Sebeok Thomas A. (ed.) (1994) *Encyclopedic Dictionary of Semiotics.* Berlin: Mouton de Gruyter.

Stecconi, U. (2004) "Semiotics" In *Routledge Encyclopedia of Translation Studies.* (eds) M. Baker and G. Saldanha, 260–263. London: Routledge.

Strurrock, John (1986) *Structuralism.* London: Paladin.

Voloshinov, Valentin N (1973) *Maxim and the Philosophy of Language.* (Tran.) Ladislav Matejka and I R Titunik. New York: Seminar Press.

Whorf, B. L. (1956) *Language, Thought and Reality* (ed.) John B Carrol Cambridge, MA: MIT Press