This study provides key insights into the overall nature of translation divergence between Kashmiri-English language pair and can serve as a theoretical base for further research in this direction. It broadly outlines some of the problem areas (Divergence areas) which must be addressed before designing an MT system for Kashmiri-English language pair. It brings forth many areas which need to be analysed and incorporated for the accuracy and proficiency of any KEMT system. Besides being of a practical importance, this study also falls within the domain of contrastive linguistics and can be utilized for language teaching purposes as well.

Kashmiri and English share many similarities but the differences are much more prominent. English is an analytical language relying mainly on the word order whereas Kashmiri with its rich inflectional system has a flexible word order and has a very well developed case system. This contrast between the morphological nature of the said languages forms the root cause of divergence which is so evident for this language pair. Kashmiri language has different types of inflections for expressing a wide variety of lexical and grammatical meanings like number, tense, gender, person, case which is very much different from English language which has evolved different mechanism for expression of the phenomena which are expressed with inflections in Kashmiri language. This different expression of the same grammatical phenomena is the cause of divergence as many of the morphological mechanisms in Kashmiri are mapped on to syntactic means in English language. A MT system for Kashmiri English language pair has to be well equipped for incorporating various kinds of morphological inflections and must be able to handle the divergence when the sentences from Kashmiri are translated into English involving a mapping of Kashmiri inflections to the syntax of the English language.
Verbs in Kashmiri exhibit a much more complicated morphological behavior and complex rules are observed for different agreement patterns. Verbs change their form and have different cases in different tenses. Kashmiri language is rich in terms of having a wide variety of compound, conjunct and dative verbs which differ in behavior from the corresponding simple English verbs. The complex behavior of these wide varieties of verbs along with their agreement and conjugation patterns has to be a part of Kashmiri English MT system. On the basis of their conjugation, verbs in Kashmiri consist of three classes i.e., the first conjugation which includes transitives and ergative intransitives, the second conjugation which includes special intransitives and the third conjugation which includes regular intransitives. All these verb classes need to be listed separately for any computational operations. Kashmiri has a morphological mechanism for making causatives and double causatives which are mapped on to the syntactic mechanisms in English, hence leading to divergence.

Like verbs, nouns in Kashmiri also exhibit a complex behavior and have more inflectional variation than the corresponding nouns in English. English is a gender neutral language but Kashmiri nouns are marked for gender and this leads to a considerable divergence between this language pair. A Kashmiri-English MT system has to address the questions concerning different nominal inflections, patterns of complementation and adjunction. The differences between pre-head and post-head modifications in nouns, peripheral dependents and other such questions have to be given a due consideration.

Pronouns have different classes which are more varied and complex in Kashmiri and their inflections, agreement patterns have to be incorporated in a Kashmiri-English MT system. Pronouns have more case forms than nouns. Pronouns are more divergent due to their association with the phenomena of anaphora and diexis. In addition to the phenomena of anaphora and diexis, Kashmiri has special emphatic pronominal suffixes and other kinds of pronominal suffixes which have no exact morphological equivalent in English and find expression in English language only through the syntactic mechanisms leading to morpho-syntactic divergence. Thus, a number of mechanisms like subject-less construction, pleonastic constructions, topicalisation and other such phenomena are realized morphologically in Kashmiri leading to a considerable divergence. Kashmiri has a more variable system of relatives and
correlatives, and even reflexive pronouns and interrogative pronouns show much variability and vary as per number, gender and tense leading to a considerable morpho-syntactic divergence between Kashmiri and English. Similarly, compound pronouns in Kashmiri show certain semantic peculiarities leading to considerable divergence.

Like other word classes, adjectives and adverbs also lead to certain divergence. In addition to the more complex and more varied inflections in Kashmiri, adjectives in Kashmiri show variation with respect to attributive and predicative uses. Aggregatives in Kashmiri are formed through different morphological means whereas in English the same are formed through syntactic mechanisms leading to the translation divergence. Special expressions are used for fractions in Kashmiri and even a morphological mechanism is utilized for expression of approximation in Kashmiri which are also divergent from English language.

Kashmiri is a post-positional language whereas English is a prepositional language leading to what can be termed as positional divergence. Prepositions in English do not show any inflectional variation but the corresponding post-positions in Kashmiri show inflectional variation. Post-positions in Kashmiri are classified on the basis of the cases which they govern like post-positions governing dative case (Type I), post-positions governing ablative case (Type II), and post-positions governing both dative and ablative (Type III) case leading to considerable morpho-syntactic divergence. Conjunctions in Kashmiri and English exhibit more or less similar behavior and are less divergent than the other word classes.

Translation of noun phrases involves mismatch in terms of definite/Indefinite articles. The indefinite article in English is rendered through morphological means in Kashmiri and the definite article in English is rendered through different mechanisms leading to morpho-syntactic divergence. Translation of other phrasal types also leads to considerable divergence due to different morphological operations and the corresponding morpho-syntactic mechanisms. The range of negatives in Kashmiri is much more variable than English and other morphological mechanisms in Kashmiri like reduplication, compound and conjunct formation in Kashmiri lead to divergent structures in English.
Verbs in Kashmiri show complex agreement and conjugation patterns and this has many implications for translation between different tense types. Kashmiri sentences are marked for additional features of gender, honorifics and remote and proximate distinctions giving rise to a one to many or multiple divergence when translating across tenses. For example while translating a present definite tense, one can find that a sentence having a total of six forms in English is translated in Kashmiri to about twenty forms giving rise to a (6:20) pattern of MT divergence. Past indefinite shows a (6:20) pattern whereas future indefinite shows a (6:16) pattern. The translation across other tense types is also highly divergent with one to many divergence with present continuous and past continuous showing a (6:20) pattern with a (6:16) pattern for future continuous tense. Present perfect tense, past perfect tense and future perfect tense show a (6:15) pattern whereas present perfect continuous tense, past perfect continuous tense and future perfect continuous tense show a (6:13) pattern.

Translation of simple, compound and complex sentences involve a number of different types of translation divergences like constituent order divergence, conflation divergence, null divergence, divergence involving back shifting, infinitival construction divergence, null subject divergence, divergence involving possessive construction and divergence involving emphatics and causatives. A considerable divergence is observed in translation of interrogative sentences and their types. Morpho-syntactic divergence comes forth in translating different question types as many question types in Kashmiri utilize certain morphological means which are absent in English. In question word type questions, the question word in English always comes at first while in Kashmiri, it mostly comes at the second position. Kashmiri has a mechanism of reduplicated question words which also causes divergence when translated into English.

Imperative sentences in Kashmiri show divergence in terms of honorifics and pronominal suffixes which have no equivalent constructions in English leading to translation divergence. Similarly, Kashmiri language has a morphological mechanism for expression of empathy which is not present in English leading to divergence. Divergence is also observed in the translation of vocative expressions. Kashmiri has a well developed system of vocatives exhibiting a hierarchy which has no corresponding parallels in English causing divergence. Kashmiri language exhibits
degrees of vocation through morphological means which also leads to translation divergence.

Translation between modal verbs further reveals a rich area of divergence between Kashmiri-English language pair. Kashmiri utilizes a number of morphological and lexical mechanisms for the expression of modality which has no absolute equivalents in English leading to morpho-syntactic divergence. Kashmiri utilizes doubling strategy, conjunct verbs, adverbial particles, question morphemes, and other suffixes for expression of modality whereas English lacks such mechanisms for the same.

Another area where a considerable divergence is observed between Kashmiri-English language pair is the area of passivization. Kashmiri besides having canonical passives like English, has a wide variety of mechanisms for passivization phenomena which are absent in English causing morpho-syntactic divergence. These mechanisms include a flexible word order, use of conjunct verbs, movement of postpositional objects, adjectival passives, non-active passives (passives with no active counterparts) and Pronominalization.

The divergence patterns outlined in this study are intended to serve as a theoretical construct for the development of any MT system in the future and providing it with sound linguistic principles to increase the accuracy and proficiency of its output. The divergence patterns outlined here can be utilized for further advanced research in this direction. This study also reveals that a successful MT system for Kashmiri-English language pair would be one which combines the rule based, example based and statistical approaches for its design given the complex nature of linguistic rules for the Kashmiri-English language pair.