



The Material Clause System in English and Urdu Tests: A Corpus-based Analysis of Ideational Metafunction

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ABSTRACT: *This paper deals with material process and its subsystems in English and Urdu clauses. The data has been collected from the novel, 'Things Fall Apart' and its translated Urdu version 'Bikharti Duniya'. Both English and Urdu corpora were tagged by POS tagger. Afterwards the clauses of material processes were annotated through a designed scheme of the UAM corpus tool. In the results, the first constraint is that some Urdu material processes e.g. بچھائی demand circumstances as essential elements which is not necessary in English. Secondly, some English relational processes are semantically material processes which are material processes in Urdu as well. Thirdly, material process 'passed' is di-transitive having two outcomes but the material process پکڑادی is di-transitive having one outcome. Fourthly, some participants as goals in English material clause work as circumstances in Urdu material clause. Fifthly, some of English material verbs can replace their mental verbs, e.g. 'to see' into 'to meet' but in Urdu, it is not done. Sixthly, reflexive pronouns are used as participants and adjuncts in operative and receptive English material clause but not in Urdu. Lastly, some Urdu material processes need circumstances which is not necessary in English. This paper observes variant ideational metafunction in Urdu and English languages.*

Keywords: Material Clause, Annotation, Subsystems, Ideational Metafunction, Corpus

Introduction

A language has many syntactic, semantic, pragmatic etc. functions. The aspects of all these functions are included into metafunctions. Halliday (1985) has proposed the term 'Metafunctions'.

According to him, an adult language possesses three metafunctions, ideational, interpersonal, and textual. The study of metafunctions is related to systemic functional linguistics. In SFL, these metafunctions are the reflection of different aspects of meaning at the semantic level. The metafunctions also discuss that a language is a social activity in any situational or cultural context. This concept leads to register-based parameters of metafunctions in which ideational function refers to 'field' parameter, interpersonal function refers to 'tenor' parameter and textual function refers to 'mode' parameter.

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Moreover, these parameters of metafunctions are interpreted at lexico-grammatical level in which ideational field is analyzed in terms of transitivity system, interpersonal tenor is analyzed according to mood system and textual mode is analyzed according to theme system. The subsequent diagram shows the relationship of metafunctions.

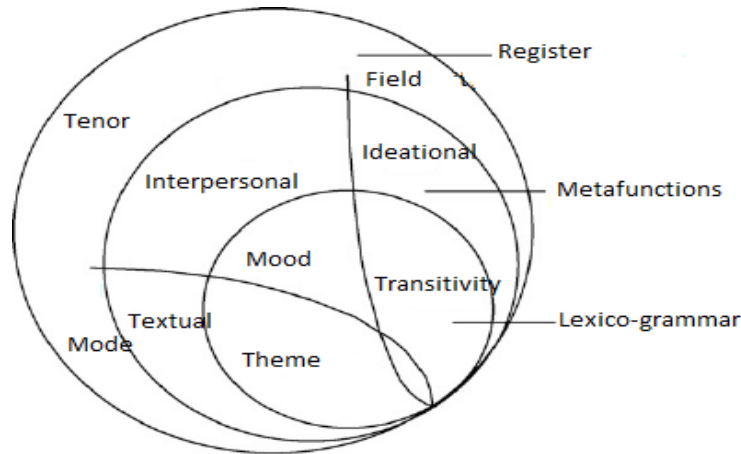


Figure 1. The Spectrum of Metafunctions

In the spectrum of metafunctions, the ideational function contains sense of experience and logic. It is obvious that a language construe human experience. The human experience is related to ideational function which is dedicated by the certain resources of lexico-grammar. Keeping in view the human experience, during the use of language in society, social relationships are also built. To use language to construct relationships is its interpersonal function. In both functions, utterances or clauses are used, which are not only figures but also propositions through which information is exchanged. The distinction between both functions determines them two networks of the same system (Halliday, 1969; Martin, 1990). The metafunction which determines the sequence of discourse, organizes the discursive flow and creates cohesion and continuity is called textual metafunction. These metafunctions are not called just simple functions because simple functions use language without having any significance for the analysis of language (Halliday & Hasan, 1998; Martin, 1990). But it is not the case with metafunctions because the systemic analysis of language has intrinsic functionality and the structure of language is arranged along functional lines. The present research encompasses ideational metafunction with its field parameter and transitivity analysis. In transitivity system, six processes and

their subsystems are elaborated in clauses. But this research explains only material process and its subsystems.

The ideational metafunction of language interlinks the ideas and in a particular register, reflects the field parameter. It is divided into experiential and logical functions. In experiential function, a speaker focuses on utterances for the sake of communicating the ideas. People, objects, abstractions, actions, events, etc. are encircled by speaker in this function. The headings of participants, processes, attribute and circumstance are grouped in terms of experiential components. The participants are typically nominal but not necessarily only a nominal group. The processes are verbal groups and include events, actions and state of being. The circumstantial elements are related to adverbial groups of time, location and manner. The attribute elements are features and qualities related to adjectival groups. In ideational function not only the context of situation is discussed, but also the role relationship among experiential components is discussed. Experiential components are the part of transitivity system. The transitivity system is sketched as follows:

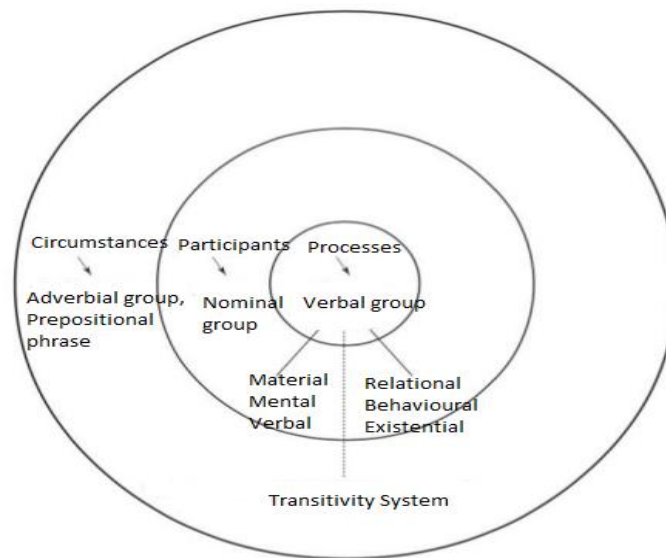


Figure 2. The Transitivity System of Ideational Metafunction

In this transitivity system, six processes are highlighted. This study describes only material process and its subsystems at clausal level. Furthermore, the participant types and circumstance types have not discussed in this research. The other processes with their participant and circumstance types of ideational metafunctions can be identified in the future researches. The corpus designed for this study is small. Many functional and grammatical constraints can be examined by extending the word length of

the corpus. This research selects genre of prose for the corpus. Other genres can also be selected for better analysis of other metafunctions as the genre of discourse is required for the analysis of interpersonal metafunction.

The reason of conducting this study is to fill the research gap and contributes into the SFL researches. Many researches including comparative and contrastive analysis of metafunctions of English in comparison with other languages have been done. But almost no significant research has been conducted to compare ideational metafunction of English and Urdu languages. SFL is not a new theory for the description of linguistic features but in many recent researches, the theory of metafunctions is being applied. In the fields of language education, the application of SFL is valuable (Schleppegrell & Colombi, 2010). This theory is essential to solve the problems of learners who face difficulties of reading. The reading skills of a number of students have been improved by the implementation of this theory in educational courses (Gray, 1999). Gray and his colleagues conducted a project in which SFL was well-versed in the educational framework. This framework is known as 'High Order Book Orientation'. They improved the learners' knowledge that meanings are constructed with the help of linguistic choices in the texts. In the learners' reading, improvements were observed because of practical and theoretical implementation of SFL (Rose, Gray & Cowey, 1998). It is stated that the application of SFL is beneficial for child language development (Painter, 1999). When children study literary texts, their manners of studying are influenced by the styles of study. The incorporation of SFL into the styles of study polishes the manners of children (Knowles & Malmkjær, 1996). For the teaching of grammar of a language, SFL is also demanded as the grammar of English is taught through SFL in the schools of New South Wales and Queensland in Australia. After learning grammar through SFL, the learners succeeded in understanding the knowledge of literary texts. Moreover, the application of SFL helps learners gain proficiency of reading skill. As it is obvious that in teaching and learning language, SFL performs an important part, so to identify subsystems of material process from English and Urdu Clauses is the first aim of this study. The second objective is to annotate the English and Urdu clauses through the scheme of UAMCT. The third aim is to find out grammatical and functional constraints of material process from English and Urdu clauses.

To secure these objectives, the following questions have been designed.

1. What is subsystems' frequency of occurrence in material process in English and Urdu clauses?

2. What are grammatical and functional constraints of material process in English and Urdu clauses?

The subsequent portion reports the review of literature on SFL, material processes and clause systems with the process of annotation. The next section canvasses the theoretical framework and methodology before the discussion of data analysis. In the end, the concluding remarks have been furnished.

Literature Review

The present study deals with the analysis of two languages to investigate the diversity of material clause system in ideational metafunction. In the field of systemic functional linguistic, many researches have been conducted through many ways and in many contexts. The study of Comrie (1976) on aspect and the study of Hopper and Thompson (1980) on transitivity in discourse are evidences. The studies of Wang and Xu (2013) and Teruya and Matthiessen (2015) are also the examples of this aspect of typology within SFL.

Systemic Functional Linguistics

SFL models a language to make meanings and choices. A language is a tool to develop communicative relations (Malmkjær, 1991) and a social semiotic phenomenon. SFL handles language not only according to its formal structure but also its use, according to context of culture and situation (Halliday, 1985, 1994; Matthiessen, 1995; Martin & Rose, 2003). Halliday supports SFL to identify how and why the texts mean and what they do (Halliday, 1971; Halliday, 1983; Martin, 1992; Halliday & Matthiessen, 2004). Halliday (1994) states that context of situation treats mode, field and tenor related to three metafunctions. Ideational metafunction specifies how the world is perceived (Fowler, 1986). The components of ideational metafunction are organized through transitivity system. Transitivity deals with the transmission of ideas. The processes in transitivity system represent the conceptions of the world. Transitivity narrates that the world is perceived according to three dimensions: the material world, the world of consciousness and the world of relations. Semantic roles assigned to the participants are also analyzed in transitivity system.

Material process and clause systems

The action verbs of doing and happening are tackled in material process. The clauses of material process encircle two inherent participants naming 'Actor' as an essential participant and 'Goal' as an optional participant. Along with participants, the clause of material process takes the element of circumstance. The circumstantial elements are adverbial and

prepositional phrases answering how, where, why and when the action is done. In fact, the information of place, time, extent, matter, manner, duration, condition, means, etc. is provided by circumstance. In short, the material clause system combines the elements of participants, process and circumstance. The material clause has its further subsystems. The clauses of experience construe change in the flow of events through their subsystems.

Transitive and intransitive material clauses

The clauses of material process have transitive and intransitive subsystems. For transitive material process, two participants in the form of 'Actor' and 'Goal' are necessary while intransitive material process requires only one participant as 'Actor'. The intransitive material process provokes the idea of ergativity. The participant 'Actor' unfolds the action towards an outcome. i.e. 'Goal' in transitive clauses. Such clauses represent the meaning of 'doing'. Bloomfield (1933) and Halliday (1985) used the term 'Goal' which is an extended participant of the process. The intransitive process restricts the unfolding of action and contains only one participant as 'Actor'. The restricted intransitive process represents the meaning of 'happening'. From these transitive and intransitive processes, the term 'Transitivity' is derived.

Operative and receptive material clauses

Operative and receptive are also subsystems of material process. Operative process is always active with an active participant as the doer of action. It contains the both participants, Actor and Goal. Receptive process shows the passive nature of the doer of action and most of the times the doer of action is missing. The patient and goal are used as the initial component of receptive clauses. Operative and receptive processes are dealt through transitive clauses. Intransitive clauses do not have the concept of operative and receptive processes.

Creative and transformative material clauses

Creative and transformative subsystems are recognized with the actor of intransitive clause and the goal of transitive clause. Creative processes are both transitive and intransitive. No separate element in the form of circumstance is used with creative material transitive or intransitive processes. Transformative process takes circumstance as a necessary element in both transitive and intransitive clauses. Transformative clauses represent the outcome as the change of some aspect of an already existing actor or goal. The element of circumstance in transformative clause is an attribute specifying the resultant state of the goal (Halliday, 1967b). In fact, the range of transformative clause is wider than the creative clause. The three outcomes of transformative clause are elaboration, extension and enhancement of the actor and goal.

The current research figures out all the subsystems of material process. From the clauses of two languages, the subsystems of material process are inspected to check constraints regarding ideational metafunction and lexicogrammar.

The Process of Annotation

The process of annotation both manual and automatic faces many challenges. Scientific methodologies are developed which ensures the reliability of the annotation process. The methodologies are developed by the researchers belonging to the NLP community. Two principle stages of standard methodologies in NLP annotating corpus are related to manual annotation of texts with the desired tags and to the training of algorithms. Hovy and Lavid (2010) suggest the steps for manual annotations for NLP. Firstly, he suggests to identify the representative texts for training corpus. Secondly, he states to specify the set of tags, their applicability etc. According to him, annotators' instructions as codebook should be written. Thirdly, the feasibility of annotator manual should be determined by annotating fragments of training corpus. Fourthly, the results should be measured in order to know the appropriate measurements for further application. Fifthly, the agreement among annotators should be determined as satisfactory. In case of unsatisfactory agreement, changes should be made in the manual and annotators' instructions. Sixthly, the annotation process should be based on months and years for the improvements in the annotation of a large corpus. Seventhly, he suggests to train automated NLP machine and measures its performance after the annotation of the sufficient material. Lastly, after the satisfactory agreement, the application of technology is possible on un-annotated material. This research is a corpus-based research for which annotation is necessary.

Theoretical Framework

The framework of the ideational metafunction proposed by Halliday (1985) has been used in the present research. The diversity of the ideational metafunction between English and Urdu clauses has been observed. Metafunctions are studied in the field of systemic functional linguistics. The framework of metafunctions has a capacity to be applied to all languages. Metafunctions deal with functional and semantic properties more than syntactic properties of a language. Functional and semantic properties of all languages are different according to their contexts and human cultural practices. Such properties are investigated through three metafunctions i.e. ideational, interpersonal and textual. These metafunctions are termed as systemic clusters, including semantic systems. They sketch out the structure of the clauses. They help a language to define its principles in order to work in a systematic way (Halliday, 1985). It is argued that the three metafunctions

have equal status and they are woven together equally into the same linguistic unit (Hassan, 2009).

The ideational metafunction comprises a theory of experience and has further two functions i.e. experiential and logical. The experiential function focuses the speakers' experience in making grammatical choices. Speakers classify and categorize the linguistic items in a structure, making sense according to their experience. Furthermore, they interpret the categories in terms of their contextual meaning. The logical function is defined as logical-semantic relationship among clause units. Speakers decide the logical function of their utterances, whether they have to choose two clauses of similar capacity or different capacity. In the process of choice, to determine the meaning relations is an essential point and is related to experiential function. In ideational function, speakers' experience in building logical clauses is connected to the field. The field is a discourse setting in which speakers' experience and logic work together for language use. Moreover, the ideational function administers the transitivity system which manages the clauses of representation combining grammatical units named as participants, processes and circumstances. These units are further categorized into various subsystems. The following figure presents the subsystems of material clause.

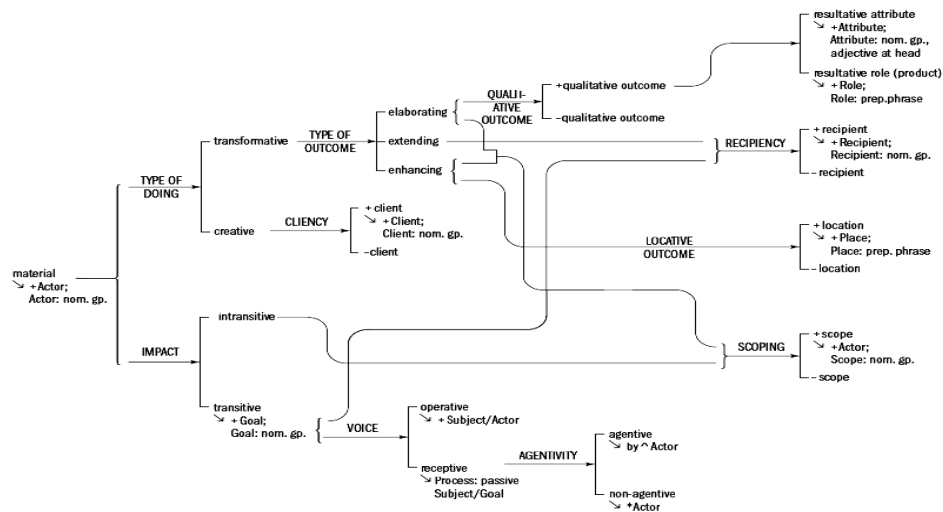


Figure 3. The Material Clause Systems

Research Methodology

This study aims to depend on qualitative and quantitative analysis. According to quantitative analysis, statistical measurements have been displayed in tables and according to qualitative analysis, the description of results has been given in discussion section. This mixed methodology has

been adopted to identify material process and its subsystems in English and Urdu clauses. To investigate the material process from English and Urdu clauses, the data has been collected from the novel, ‘Things Fall Apart’ and its translated Urdu version ‘bikharti Duniya’. The collected data has been developed into two corpora. First, the English corpus was tagged by POS Claws tagger and the Urdu corpus was tagged by the POS Urdu tagger. Through POS tagging, lexical material verbs of doing and happening were screened. Afterwards the screened clauses of material verbs in both Corpora were annotated according to subsystems of material process through UAM corpus tool. For the annotation, UAM corpus tool exports a designed annotation scheme. The English clauses were annotated in UAMCT but Urdu annotation has been done manually. The following is the annotation scheme which UAMCT has exported.

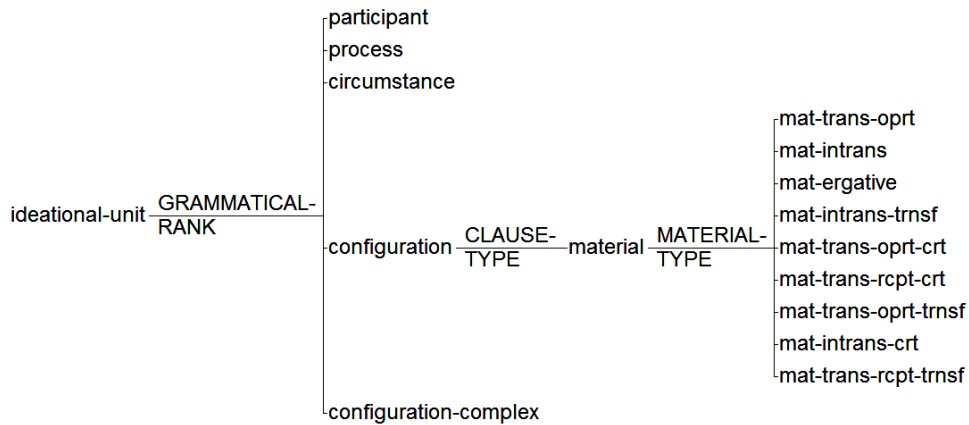


Figure 4. The Annotation Scheme of Material Clause Systems

Data Analysis

The analysis shows the statistics and frequency of material process. All the analysis has been done through a software annotation. But some annotations cannot be done automatically like the annotation of semantic and pragmatic features. So, in this research also the data has been annotated manually. The UAM corpus tool is used for both semi-automatic and manual annotation. It is a base system which allows a user to apply tags to segments of text. An interface presents a text, the user can swipe a segment of text, and is then prompted to select tags to assign to that segment. Through the use of this tool, the annotated statistics have been displayed in the subsequent table.

Table 1

Statistical Measurement of Corpora in UAMCT

LENGTH		LEXICAL DENSITY	
Number of Segments	209	Lexemes per Segment	7.47
Words in Segments	3467	Lexemes % of Text	45.02%
Tokens in Segments	3897	SUBJECTIVITY	
TEXT COMPLEXITY		Subjective Positivity	-0.096
Av. Word Length (chars)	4.20	Subjective Strength	0.426
Av. Word Length (Syllable)	1.92	REFERENCE DENSITY	
Av. Segment Length (tokens)	16.59	1p Reference	0.317%
Min. Segment Length (tokens)	4	2p Reference	0.260%
Max. Segment Length (tokens)	49	3p Reference	9.172%

The table shows the statistical measurements of corpora done through UAMCT. The selected corpora have almost equal range of clauses. The clauses of both corpora have almost equal length, text complexity, lexical density, subjectivity and reference density. The statistics explain the word limit of corpora through all these features.

Subsystems' Frequency of Occurrence in Material Process

The frequency difference of material process and its subsystems in English and Urdu clauses has been given below in two tables. The first table exhibits the material verbs regarding their tense condition in English and Urdu corpora. The second table unfolds the occurrence of subsystems of material process in English and Urdu corpora.

Table 2

Occurrence of Material Verbs in English and Urdu Corpora

Material Verbs List	English Corpus	Urdu Corpus
Material Verb Present	6%	12%
Material Verb Past	76%	86%
Material Verb Past Participle	50%	40%
Material Verb Progressive	34%	4%
Material Verb Infinitive	38%	20%

The table expresses the tagged results of material process from English and Urdu corpora. After tagging the corpora, the material process and its verb forms have been counted and the percentage has been given in the table. The table shows that material verbs in the form of past participles have been used by the writers more frequently than others. It can be due to genre of the research data. Due to collection of data from the novel, it is obvious that past verbs and past participle verbs should be in high frequency. The major difference of material verb progressive between English and Urdu corpus is seen. The next table displays the occurrences of subsystems regarding material process in English and Urdu clause system.

Table 3

Occurrences of Subsystems of Material Process in English and Urdu Corpora

Subsystems of Material Process	English Corpus	Urdu Corpus
Material-Intransitive (ergative)	16%	10%
Material-intransitive-transformative	90%	96%
Material-transitive-operative-creative	32%	26%
Material-transitive-receptive-creative	6%	8%
Material-transitive-operative-transformative	38%	46%

Material-intransitive-creative	2%	0%
Material-transitive-receptive-transformative	16%	12%

This table displays the annotated results of subsystems of material process. The material process has its subsystems: transitive, intransitive, operative, receptive, creative and transformative. The transitive material process has two participants as actor and goal with or without circumstance. The intransitive material process has only one participant as actor with or without circumstance. The operative material process designs a transitive active clause. The receptive material process designs a transitive passive clause. The creative material process consists of transitive and intransitive clauses without circumstance. The transformative material process consists of transitive and intransitive clauses with circumstance. All these processes are interconnected with one another. The table shows the difference of occurrence of these processes in English and Urdu clauses. The material intransitive process is frequently occurred in English than Urdu. Almost all the material process are more frequent in English and less frequent in Urdu except the material transitive operative transformative clauses which are more frequent in Urdu. It seems that most of the clauses in Urdu include the subsystems in the combination of material transitive operative and transformative.

Grammatical and Functional Constraints

The present research finds grammatical and functional constraints through the corpus based analysis of material processes from English and Urdu clauses. The grammatical constraints uncover the lexico-grammatical or transitivity distinction and the functional constraints uncover the ideational or ideological distinction of two languages. The material clause system includes its participants, process and circumstance. The participants are called actor and goal which have their further subsystems but in this research the subsystems of participants have not been focused. Only the material verb and its subsystems are discussed in terms of English and its translated Urdu clause system. Material verbs are action verbs of doing and happening. The subsystems of material process are transitive, intransitive, operative, receptive, creative and transformative. These subsystems are interconnected to one another. According to their connection, the annotation scheme taken from UAM corpus tool has been applied to draw the variant constraints from material clauses of English and Urdu. Both grammatical and functional constraints have been mentioned with the subsequent examples. The following clause defines the constraint difference of creative and transformative material process.

Table 4

(1a). Okoye unrolled the goatskin which he carried under his arm.

Okoye	unrolled	the goatskin which he carried under his arm.
participant	process: material	Participant
Mat-trans-oprt-crt		

Table 5

(1b). اوکوئی نے بغل سے بکری کی کھال نکال کر زمین پر بچھائی۔

بچھائی	زمین پر	نکال کر	بکری کی کھال	بغل سے	اوکوئی نے
unrolled	on ground	taking	goatskin	from under- arm	Okoye
Process: material	circumsta nce	circumst ance	participant	circumstance	participant
Mat-trans-oprt-trnsf					

The example (1a) shows the formation of creative clause but the translated example (1b) has converted into transformative clause. The English creative clause has a nominalized participant which has been changed by the Urdu translator into a circumstance. The mode of translation is not wrong because such transformative formation is also possible in English as well. Even the English clause can also be translated as creative if circumstance is nominalized. So, it is a grammatical constraint that a creative English clause can become transformative Urdu clause in material clause system. This constraint is the result of distinctive adjustment of transitivity components.

From the perspective of ideational metafunction, the example (1a) consists of two participants and a material process. The material process takes actor as an animate participant and the goal as an inanimate participant. No circumstance is located as the outcome of material process. But the translated example (1b) contains two participants, a material process and three circumstances. The translated material process takes the circumstances of manner and place. Here, the ideational metafunction of English clause is different from translated Urdu clause due to the incorporation of

circumstances. The translator construes the performing of action with the outcomes of elaboration which elaborate the sequence of action. The process بچھائی in Urdu clause needs an extended circumstance to elaborate where the action unrolling the goatskin has been done. In this respect, the circumstance زمین پر elaborates the specific place of action. It is functional constraint that some Urdu material processes demand circumstances as essential elements to determine action. The next example expresses the difference of material and relational process and how process type is changed across languages.

Table 6

(2a). He was very good on his flute.

He	was	very good	on his flute.
carrier	Process: relational	attribute	adjunct
*Mat-trans-oprt-trnsf			

Table 7

(2b). وہ بانسری بہت عمدہ بجاتا تھا۔

بجاتا تھا	بہت عمدہ	بانسری	وہ
played on	very well	Flute	he
Process: material	Circumstance	Participant	Participant
Mat-trans-oprt-trnsf			

The examples (2a) and (2b) show the difference of relational and material clauses. The English clause in (2a) seems to have a relational clause formation, but the sense of the clause is material as the action of playing the flute is involved. The transitivity analysis determines the clause as relational. The translator has translated the clause into Urdu perceiving the sense of material clause. During translation the relational English process has become a material Urdu process. This case is not observed in all relational clause systems. Only few relational verbs can be translated in this way. So it is claimed that material, relational or any other process may differ in their status from language to language. The following example defines the material status of the English verb 'played on'.

Table 8

He played on his flute very well.

He	played on	his flute	very well.
participant	Process: material	participant	Circumstance
Mat-trans-oprt-trnsf			

Ideational metafunction of the example (2a) is described by the relational process having one participant, attribute and an adjunct. The process of the example (2b) takes two participants and a circumstance of manner. If the relational clause (2a) is translated into Urdu following the same components, the translated clause will not be able to convey exact information e.g. *وہ اپنی بانسری پر بہت عمدہ تھا۔* If it is necessary for Urdu clause to follow relational process, another composition of translated clause, e.g. *وہ اپنی بانسری بجانے میں بہت عمدہ تھا۔* is appropriate to convey exact information. In this translated relational clause, the material process *بجانے* has also been inserted. So, to avoid the use of two processes, the translator has translated the relational English clause into material Urdu clause. Here, it is observed that grammatical and functional constraints are similar. The grammatical constraints work as functional constraints as well. Another grammatical constraint regarding di-transitive verbs is examined through the subsequent example. The example (3a) has been given twice, which highlights the different structure of di-transitive verbs in English which is not possible in Urdu.

Table 9

(3a). He passed the disc over to his guest.

He	passed	the disc	over to his guest.
participant	Process: material	participant	circumstance
Mat-trans-oprt-trnsf			

Table 10

He passed his guest the disc.

He	passed	his guest	the disc.
participant	Process: material	participant	participant: recipient
Mat-trans-oprt-trnsf			

Table 11

(3b). اس نے طشتری مہمان کو پکڑا دی۔

پکڑا دی	مہمان کو	طشتری	اس نے
passed	to the guest	the disc	He
process: material	circumstance	participant	Participant
Mat-trans-oprt-trnsf			

The transformative material clause has its three outcomes: elaborating, extending and enhancing. Material verb in English transformative clause has all these outcomes, but in Urdu only elaborating and enhancing outcomes are noticed. The reason is that the English transformative clause with di-transitive verb takes two participants in enhancing outcome, e.g. ‘*he* passed *the disc* over to his friend’ and Urdu transformative clause with di-transitive verb also takes two participants in enhancing outcome e.g. *اس نے طشتری مہمان کو پکڑا دی*. In this Urdu clause, with the effect of dative ‘ko’ the word *مہمان کو* is not taken as participant. But on the other hand, an English transformative clause with di-transitive verb takes three participants in extending outcome, e.g. ‘*he* passed *his guest the disc*’ while Urdu transformative clause with di-transitive verb does not form structure of extending outcome. So, it is claimed that material process ‘Passed’ is di-transitive having both extending and enhancing outcomes, but the material process *پکڑا دی* is ditransitive having only enhancing outcome in transformative clauses. This constraint is also dealt as functional constraint. The next constraint explains how transitive material processes of English become intransitive material processes of Urdu.

Table 12

(4a). He painted his big toe.

He	painted	his big toe.
participant	process: material	participant
Mat-trans-oprt-crt		

Table 13

(4b). اپنے پاؤں کے انگوٹھے پر اس نے رنگ کیا۔

رنگ کیا	اس نے	اپنے پاؤں کے انگوٹھے پر
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painted	he	on his big toe
process	participant	Adjunct
Mat-intrans		

The example (4a) is of transitive verb having operative and creative subsystems. Its translated example (4b) is of intransitive verb. The material English clause '*he painted his toe*' can also be formed as intransitive e.g. '*on his toe, he painted*' but according to grammatical constraint, material Urdu clause in (4b) cannot be made transitive due to the prepositional circumstance اپنے پاؤں کے انگوٹھے پر which is called participant in English. But in Urdu it is circumstantial phrase. So, it is claimed that some participants as goal in English material clause work as circumstance in Urdu material clause. The following example also confirms the circumstantial behavior of the goal '*his big toe*'.

Table 14

اس نے اپنے پاؤں کے انگوٹھے پر رنگ کیا۔

رنگ کیا	اپنے پاؤں کے انگوٹھے پر	اس نے
painted	on his big toe	He
process	circumstance	Participant
Mat-intrans-trnsf		

Moreover, if the English material clause is translated into living in the parameters of transitive clause, the design of the clause will be as follows:

Table 15

اس نے اپنے پاؤں کا انگوٹھا رنگا۔

رنگا	اپنے پاؤں کا انگوٹھا	اس نے
painted	his big toe	He
process	participant	Participant
Mat-trans-oprt-crt		

Here, in this example the preposition like element *پر* is omitted. The next constraint is determined through the different infinitives in material clauses of English and Urdu. The other difference is noted how mental verb becomes a circumstance after translation from one language to other.

Table 16

(5a). He had come to see Unoka.

He	had come	to see	Unoka.
participant	process: material	Process: mental	circumstance
Mat-intrans-trnsf			

Table 17

(5b). وہ یونوکا سے ملنے آیا تھا۔

آیا تھا	ملنے	یونوکا سے	وہ
had come	meet	to Unoka	He
process: material	process: material	circumstance	participant
Mat-intrans-trnsf			

The examples (5a) and (5b) both are intransitive having transformative sequence. But the English material clause seems to have two verbs: material finite and mental infinitive while the translated Urdu material clause has two verbs: material finite and material infinitive. The infinitive verb in English comes with infinitive marker 'to' but in Urdu no infinitive marker is used. Without infinitive markers, the infinitives are determined through different formations like *ملنے سے* in (5b). Here the difference occurs when from English mental infinitive verb is translated as material infinitive verb in Urdu. If the mental infinitive 'to see' is translated as mental the meaning of the clause may disturbed. It is claimed here that some of English material verbs can replace their mental verbs e.g. 'to see' and can become 'to meet' but Urdu material verbs cannot replace their mental verbs. The next instance identifies the difference of operative and receptive material clause. The example (6a) has been drawn twice, first is operative and second is receptive in two different tables.

Table 18

(6a). He stretched himself on his bamboo bed.

He	stretched	himself	on his bamboo bed.
participant	process: material	participant	Circumstance
Mat-trans-oprt-trnsf			

Table 19

He was stretched by himself on his bamboo bed.

He	was stretched	by himself	on his bamboo bed.
participant	process: material	adjunct	Circumstance
Mat-trans-rcpt-trnsf			

Table 20

(6b). وہ بانس کی چارپائی پر لیٹا تھا۔

لیٹا تھا	بانس کی چارپائی پر	وہ
stretched	on his bamboo bed	He
process: material	circumstance	participant
Mat-intrans-trnsf		

Table 21

وہ بانس کی چارپائی پر لیٹا تھا۔

لیٹا تھا	بانس کی چارپائی پر	وہ
was lying	on his bamboo bed	He
process: relational	circumstance	participant
*Mat-intrans-trnsf		

The example (6a) has two subsystems of material clause. In (6a), the English material clause with a material process having participant in the form of reflexive pronoun is not translated into Urdu with the same capacity. The use of reflexive pronoun as participant and adjuncts of material process in Urdu is different from English. The example (6a) has two different formations with reflexive pronoun. In the first operative formation, the

reflexive pronoun is used as participant but in second receptive formation, it is used as an adjunct. The example (6b) denotes the omission of reflexive participant which changes the transitive condition of material process and makes it intransitive. If the reflexive pronoun is used in Urdu material clauses e.g. وہ خود بانس کی چارپائی پر لیٹا تھا۔, the reflexive pronoun works as participant in this operative material clause. But the reflexive pronoun in the clause *اس نے خود کو بانس کی چارپائی پر لیٹایا۔ cannot work as adjunct because reflexive pronouns are not used in Urdu receptive material clauses. The claim is clear that reflexive pronouns are used as participants and adjuncts in operative and receptive systems of English material clause but in Urdu material clause, reflexive pronouns are used as participants only for operative system.

Moreover, according to ideational metafunction, the example (6a) functions with two animate participants, a material process and a circumstance of place. But the material process seems to be relational process having one participant in the translated Urdu example (6b). The example (6b) has two different formations. In the first formation, the process is material without the goal. But the reflexive pronoun as goal خود can be used with this material process. In the second formation, the reflexive pronoun as goal cannot be added with relational process. The next examples indicate the grammatical constraint regarding the use of circumstance.

Table 22

(7a). He threw his head down.

He	threw	his head	down.
participant	process: material	participant	circumstance
Mat-trans-oprt-trnsf			

Table 23

(7b). اس نے سر جھکایا۔

جھکایا	سر	اس نے
threw	head	he
process: material	participant	participant
Mat-trans-oprt-crt		

The example (7a) indicates that circumstance ‘*down*’ makes the material verb ‘*threw*’ transitive and if circumstance is not used here the sense of material verb will be disturbed. Only with the material verb, the sense of the clause cannot be maintained because the verb ‘*threw*’ having the participant ‘*head*’ is unable to convey the meaning what has been done with head or what is the direction of head. So, with English material verbs like ‘*threw*’, the circumstance is used as necessary element. The case is different in Urdu as the example (7b) shows. In Urdu, only material verb چھکایا is enough to convey the meaning and mode of action and no circumstance is required. So, it is claimed that some English material verbs need circumstances to convey their mode of action. In this way, transitive transformative clauses are formed. But with some Urdu material verbs, no circumstance is attached. In this way, transitive creative clauses are formed.

Findings

The present study finds that the occurrence of material process in English and Urdu clauses is dissimilar. The grammatical and functional constraints regarding material process in English and Urdu clauses are also distinct. Seven grammatical and functional constraints have been investigated, which justify the diverse use of material process in English and Urdu clauses. According to constraints, it has been found out that Urdu material processes demand circumstances as essential elements which is not necessary in English. Some English relational processes are semantically material processes which are material processes in Urdu as well. Material process in English is di-transitive having two outcomes but the material process in Urdu is di-transitive having one outcome. Some participants as goals in English material clause work as circumstances in Urdu material clause. Some of English material verbs can be termed as mental verbs but in Urdu, it is not done. Reflexive pronouns are used as participants and adjuncts in operative and receptive English material clause but not in Urdu. Some Urdu material processes need circumstances which is not necessary in English. This research also finds the frequent use of past material verbs. There is interconnection among all the material processes but in English all material processes are more frequent than Urdu.

Conclusion

After the results and discussion, the study concludes that the material process with its subsystems in English and Urdu clauses differ in terms of their grammatical and functional constraints. Through the annotation and analysis, seven constraints have been reported which confirm the variant use of material process in English and Urdu clauses. The questions set for the research have been answered properly. The first question is answered by identifying and outlining the occurrence of material process and its

subsystems in English and Urdu clauses. It is concluded here that the occurrence of material processes in Urdu clauses is less frequent while in English clauses, it is more frequent. The statistical measurement of the occurrence proves the variant use of material process in English and Urdu clauses. The second question is answered by analyzing the functional and grammatical constraints of material process from English and Urdu clauses. Seven constraints have been elaborated and interpreted which justify that material processes are used differently in English and Urdu clauses.

References

- Bloomfield, L. (1933). *Language*. London: Allen & Unwin.
- Comrie, B. (1976). *Aspect: An introduction to the study of verbal aspect and related problems*. Cambridge: Cambridge University Press.
- Fowler, R. (1986). *Linguistic criticism*. Oxford: Oxford University Press.
- Halliday, M. A. K. (1967b). *Grammar, society and the noun*. London: H. K. Lewis for University College London.
- Halliday, M. A. K. (1969). Options and functions in the English clause. *Brno Studies in English*, 8, 81–8.
- Halliday, M. A. K. (1971). Linguistic function and literary style: An inquiry into the language of William Golding's *The Inheritors*. In S. Chatman (Ed.), *Literary style: A symposium* (pp. 330-368). London: Oxford University Press.
- Halliday, M. A. K. (1983). The language of literature: A stylistic introduction to the study of literature. Oxford: Pergamon Press.
- Halliday, M. A. K. (1985). *An introduction to functional grammar*. London: Edward Arnold.
- Halliday, M. A. K. (1994). *An introduction to functional grammar*. London: Edward Arnold.
- Halliday, M. A. K., & Hasan, R. (1998). *Language, context and text: Aspects of language in social-semiotic perspective*. Geelong, VIC: Deakin University.
- Halliday M. A. K., & Matthiessen, C. (2004). *An introduction to functional grammar*. London: Edward Arnold.
- Hasan, R. (2009). Wanted: A theory for integrated sociolinguistics. In J. J. Webster (Ed.), *The Collected Works of Ruqaiya Hassan, Vol. 2: Semantic Variation-Meaning in Society and in Sociolinguistics*. London and Oakville, CT: Equinox, pp. 5-40.
- Hopper, P. J., & Thompson, S. A. (1980). Transitivity in the grammar of discourse. *Language*, 56(2), 251–299.
- Hovy, E. H., & Lavid, J. M. (2010). Towards a 'Science' of corpus annotation: A new methodological challenge for corpus linguistics. *International Journal of Translation*, 22(1), 13–36.
- Knowles, M., & Malmkjær, K. (1996). *Language and control in children's literature*. London: Routledge.

- Malmkjær, K. (1991). *The linguistics encyclopaedia*. London & New York: Routledge.
- Martin, J. R. (1990). Interpersonal grammaticization: Mood and modality in Tagalog. *Philippine Journal of Linguistics*, 21(1), 2–50.
- Martin, J. R. (1992). *English text: System and structure*. Amsterdam: John Benjamins.
- Martin, J. R., & Rose, D. (2003). *Working with discourse: Meaning beyond the clause*. London: Continuum.
- Matthiessen, C. (1995). *Lexicogrammatical cartography: English systems*. Tokyo: International language sciences Publishers.
- Painter, C. (1999). *Learning through language in early childhood*. London: Cassell.
- Rose, D., Gray, B., & Cowey, W. (1998). *Scaffolding Reading and Writing for Indigenous Children in School*. Canberra: Department of Education, Science and Training: Indigenous Education Branch and the University of Canberra.
- Schleppegrell, M. J., & Colombi, M. C. (2010). *Developing advanced literacy in first and second languages: Meaning with power*. Nueva York: Laurence Erlbaum Associates.
- Teruya, K., & Matthiessen, C. M. I. M. (2015). Halliday in relation to language comparison and typology. In J. J. Webster (Ed.), *The Bloomsbury companion to M. A. K. Halliday*. 427-452. London: Bloomsbury.
- Wang, Y., & Xu, J. (2013). A systemic typology of existential and possessive constructions. *Functions of Language*, 20(1), 1–30.