CHAPTER 6

Semantic Integration as Emergence in Akan Serial Verb Constructions (SVCs) and Serial Verb Construction Nominalisation (SVCN)

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Abstract

This chapter aims to draw a conceptual and theoretical link between semantic integration in Akan Serial Verb Construction Nominalization and the concept of emergence as articulated in chemistry, physics, biology, neuroscience, philosophy, art and systems theory among others. I argue that the degree to which semantic integration/emergence pertains at the (serial) verb construction level may correlate to nominalisation for that class of serial verb construction or lack thereof. Therefore, in the case of Akan SVCNs, three categories of SVCs are analysed on the basis of how they are nominalised, the degree to which nominalisation occurs and whether nominalisation can occur at all. Various sources were consulted in three major literary dialects of Akan: Asante Twi, Fante and Akuapem Twi. Further, native speakers of each of these dialects were consulted to ascertain the veracity of various attested serial verb construction nominals (SVCNs) in Akan.

Keywords: Akan; emergence serial verb construction nominalisation; semantic integration; lexicalisation

1. Introduction

Lexicalisation of Akan SVCs occurs as a result of semantic integration (Osam 1994, Agyeman 2002, Hellan, Beermann and Andenes 2003, Appah 2009). Semantic integration can be understood as the degree to which an action or multiple individual actions are conceptualised as a unitary event in the mind of speakers. As such, what pertains with regard to linguistic study may be thought of more broadly as a type of emergence.

Emergence is a concept that refers to the way complex systems and phenomena, such as idioms, for example, can arise from the interaction and organization of simpler components or elements, such as SVCs in this instance. In other words, emergence describes the way that new properties, patterns, or behaviours can emerge at higher levels of organization that are not perceptibly present in the individual parts themselves. When emergence happens in Linguistics, specifically semantics, this emergence may be termed Semantic Integration.

One of the key ideas behind emergence is that complex systems can be greater than and different from the sum of their parts, and that the behaviour and properties of the system cannot be fully understood simply by analysing the individual components in isolation. Instead, emergent properties are the result of the interactions and relationships between these components, which can give rise to new patterns and structures that are not entirely present at the lower levels of organization, although, when it comes to serial verb constructions specifically, there may be degrees to be taken into account. As such, while emergence is typically thought of as being the opposite of reductionist theories of analysis and explanation, the gradient-like nature of Akan semantic integration concomitant lexicalisation may have theoretical implications with regard to ongoing debates (Stoeckler 1991, Chibbaro, Rondoni and Vulpiani 2014, Gibb, Hendry and Lancaster 2019).

To further explicate, when verbs become integrated semantically, a process of lexicalisation occurs whereby verbs in the SVC collocate to the extent that they become idiomatic in their use. Lexicalisation is generally defined as "1: the realization of a meaning in a single word or morpheme rather than in a grammatical construction. 2: the treatment of a formerly freely composed, grammatically regular, and semantically transparent phrase or inflected form as a formally or semantically

idiomatic expression" (Merriam-Webster 2022). Lexicalisation, in this context, refers to the process whereby previously disparate words increasingly come to be understood as a single lexeme semantically whereby the overall meaning is greater than/different from the individual words taken alone (although here, too, there may be degrees with regard to how traceable the semantics of the overall lexicalised expression is from its component parts).

Lexicalisation, therefore, provides a view into which semantic integration as an exemplification of the concept of emergence in the context of linguistics may be understood for the delineation of three types of SVCs along a continuum in the Akan language as introduced by Osam (1994). Degree of semantic integration is observable through lexicalisation of erstwhile disparate components and is expected to be the independent variable that effectively predicts nominalisation behaviour. The three types of SVC categories are the Clause Chaining Serial Construction (CCSC) type, the Partially Lexicalised-Integrated Serial Verb Construction (PL-ISVC) type and the Full Lexicalised-Integrated Serial Verb Construction (FL-ISVC) type. We will introduce each type of SVC and its corresponding nominal form as exemplified in (1-3):

1. Clause Chaining Serial Construction (CCSC)

    a.   M-à-dá   nò   àsé   á-br̀ɛ́
            1SG.SBJ-PRF-lay   3SG   under PRF-tire
            'I have thanked him/her to the point of exhaustion.'
    b.   ø   dà   àsè   br̀ɛ́
            +NMLZ   lay   under tire
            SVCN: dààsébŕɛ́ 'ever generous'   (Obeng 2001: 81)

2. Partially Lexicalised-Integrated Serial Verb Construction (PL-ISVC)

    a.   M-à-dí-dí   á-mɛ́ɛ́
            1SG.SBJ-PRF-eat-DUP   PRF-full
            'I have eaten and have become full.'

b.　Ɔ̀-bɛ́-dí-dí　　　　　　　　á-mɛ́ɛ́
　　3SG.SBJ-FUT-eat-DUP　　　CONS-full
　　'He/She will eat and become full.'
　　ø/à　　　dìdì　　　mɛ́ɛ́
　　+NMLZ　eat　　　　to be full
　　SVCN: (à)dìdìméé 'the act of eating and becoming full'

3.　Full Lexicalised-Integrated Serial Verb Construction (FL-ISVC)
　a.　Mè-gyè　　　　　nó　　　　dí
　　　1SG.SBJ-receive　3SG.OBJ　eat
　　　'I believe him/her.'
　　　SVCN: gyédí(é) 'belief'

The foregoing begs the question of what the basis for the three-way classification is. According to Osam:

> The point has been made in the cross-linguistic literature on serialisation that such constructions are characterised by two or more verbs used to describe a single event. ***This structural phenomenon has a semantic basis. The semantic foundation of serialisation has to do with the integration of the subatomic events that are conceived as representing a single event.*** In other words, the reason why multiple verbs in a construction are treated as conceptually coding a single event is that even though those verbs originally code separate events, these events, through the process of cognitivisation, come to be integrated as a single event. …, ***the degree of semantic integration is reflected in the syntax of such constructions and it enables us to identify different levels of integration***. The more tightly the original subatomic parts are integrated into a unitary whole, the more cohesive are the syntactic coding mechanisms (Osam 1994:193). (emphasis added)

It should be noted that there is no strict compartmentalisation (Clause Chaining, Partially Lexicalised, and Fully Lexicalised) of SVCs in Akan or in general. Such a view would be consistent with the Classical Theory (CT) of categorisation which

goes back to Aristotle, by which entities are classified according to necessary and sufficient conditions (Lakoff 1987, Osam 1994, Taylor 2003).

Interestingly, Aristotle is also credited with an early formulation of emergence as "... the totality is not, as it were, a mere heap, but the whole is something besides the parts..." (Cohen and Reeve 2000). While it is known that the Greeks studied in classical 𓊹𓅓𓏲 *Kmt* 'Land of Black people' and thus the formulation may derive from teachings acquired from there, we will return to this point with regard to the oldest formulation of emergence in the form of creation stories dated to 1550 BCE—long before Aristotle or even Greece itself, for that matter (James 2013).

The Aristotelian conception of CT, I argue, stymies the concept of emergence by pitting it at odds with resultants by his intellectual descendants who follow in this line of thinking that could easily be resolved within a PT framework. In other words, in CT a category is characterised by a set of specific features each of which is considered necessary for the definition of that category in question. Thus, for an entity to be accepted as belonging to that category it must have all the features of that category which are deemed defining, otherwise it cannot be in the class (Osam 1994:10).

Under CT, categories are conceptualised as having very rigid boundaries (in this case resultants vs. emergent). The CT perspective on the matter may best be summed up by the phrase "nothing should be called an emergent unless it can be shown not to be a resultant" (Britannica 2023). In other words, an item is either a member of the category or it is not.

This *a priori* approach has implications for early distinctions made between resultants and emergent in their conceptualization as "phenomena that are predictable from their constituent parts and those that are not (e.g., a physical mixture of sand and talcum powder as contrasted with a chemical compound such as salt, which looks nothing like sodium or chlorine)" (Britannica 2023). While salt (an emergent of sodium and chloride) may not perceptibly look to a human with finite abilities of perception like sodium or chloride, emergents are not entirely independent of their inputs in the sense that both sodium and chloride, specifically, are necessary to end up with salt (NaCL) and every atom, every electron present before their merger is also present after—they have only undergone transformation

(what I term existential emergence). This is due to the law of conservation of matter, also known as the law of conservation of mass, which observes that matter cannot be created or destroyed in an isolated system, but it can change forms or be rearranged. According to the law of conservation of matter, the total mass of a closed system remains constant over time, regardless of any physical or chemical transformations that may occur within the system. The law of conservation of matter is derived from the broader law of conservation of energy, which states that the total energy in an isolated system remains constant. The law of conservation of matter applies specifically to the mass component of the system and emphasizes that matter is neither created nor destroyed during ordinary physical or chemical processes (Lin 1995). This means that there may be degrees of compositionality irrespective of one's ability to perceive it. While George Henry Lewes, noted for coining the concept of emergence in English, distinguished between emergents and resultants, emergents are, nonetheless, the specific result of specific inputs whether or not the observer has the capacity to discern the erstwhile disparate components upon merger (Lewes 1875). One simply cannot take magnesium and mercury and end up with emergent salt. The Akan SVCN, *nkogu* 'defeat' can be thought of as the idiomatic, semantically integrated and lexicalised emergent of *ko* 'fight' and *gu* 'pour, spill' where the composite meaning is not entirely compositional as would be the typical case for, say, PL-ISVCs. However, the semantically emergent 'defeat' meaning cannot be accomplished by any other serial verbs in the language. Thus, while the idiomatic meaning is not compositional per se, it can only be accomplished by means of specific inputs. This means that there are specific properties of the original verbs and there are degrees to which, even when there is emergence, the idiomatic, semantically integrated meaning only emerged from the specific SVC in question as opposed to any other SVC. I am of the view that there is a gradient of decomposability and decompositionality whereby the degree to which one has the ability to decompose the emergent idiomatic, semantically integrated and lexicalised whole back to constituent parts may similarly be viewed along a continuum.

In other words, it makes sense that even though the emergent has different properties than its constituents and supposedly is not predictable on the basis of the inputs, there must be some degree of predictability if we can see that those inputs only gave rise to what they actually gave rise to in reality and not an alternate thing. This is particularly the case for existential emergence and may also follow for behavioural emergence. Through it all, the current discussion speaks to the centrality and

primacy of transformation whereby emergents may be thought of as inscrutable resultants.
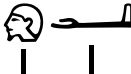
The oldest known such concept of transformation is that of 𓆣𓂝 *ḫpr* 'Kheper' from the 𓆎𓏏𓏭 *Kmtyw* (Black People) of classical 𓆎𓏏𓊖 *Kmt* 'Land of Black people' in describing all the transformations of 𓏤𓇋𓏛 *Rʿ* (Faulkner 1933, Obenga 2004:63). 𓆣𓂝 *ḫpr* 'Kheper' "the intransitive verb means: to come into being, to change, to take effect, to exist, to be." According to (Obenga 2002:33):

> Egyptian mythology is radically different. There the creative demiurge emerges from within Nwn, and only after that begins the work of creation. There is no independent Creator, no Demiurge standing over and apart from Creation, born already before the birth of the universe. In ancient Egyptian mythology, it may be asserted, **Idea emerges, and endowed with power, from raw Matter**….Every style and form of life arises from that primeval, uncreated water. That is the very origin all subsequent development. **(bold emphasis added)**

In other words, all that exists is a transformation (or transformations) of the primeval uncreated water: 𓏌𓈖 Nwn 'primeval waters' by means of 𓆣𓂝 *ḫpr* 'Kheper'. The relevant text in question is:

𓆣𓂝𓀭	𓅓	𓅮𓄿𓏏𓏭𓅱
ḫpr n.ỉ	*m*	*pꜣwtỉw*
transform CPL.1SG	in	primeval matter

'I transformed in the primeval matter

𓆣𓂝	𓆸𓏤𓏭	𓆣𓂝𓏭𓅱	𓅓	𓁶𓂝
ḫpr	*šꜣt*	*ḫpr.w*	*m*	*dp-ʿ*
transform	multitude	form.PL	in	top-arm

(I) transform as the Multitudes of Forms, from the beginning. (Budge 1904:315, Montgomery 2007:23)

Thus, from its earliest conceptualisations, emergence is a concept that describes the phenomenon of new and complex properties, patterns, or behaviours arising from the interaction and organization of simpler components or elements. It refers to the idea that a system can exhibit characteristics and behaviours that are not always directly or predictably derived from its individual parts, although, as mentioned, even here there are degrees. In emergent systems, the whole possesses properties or features that are qualitatively different from and cannot be reduced to the properties of its constituent parts although they are demonstrably derived from them.

In sum, the resultant vs. emergent distinction with regard to categorisation is derived from the CT type of conceptualisation. Rather I view SVCs as existing along a continuum from the most semantically integrated and lexicalised (FL-ISVCs) to the least semantically integrated (CCSCs). See Figure 1. Between the two ends of the continuum are items of varying degrees of semantic integration including some that may still qualify as FL-ISVCs, through cases of PL-ISVCs to CCSCs with fuzzy boundaries between them. Thus, of the three categories, FL-ISVCs represent the most lexicalised, institutionalised and idiomatised types (*i.n.* those that best exemplify the concept of semantic emergence[22]) which exist on a continuum extending through PL-ISVCs (as a middle ground) to CCSCs, which represent ad hoc nonce creations.

FL-ISVCs   PL-ISVCs   CCSCs

Figure 3: SVC continuum based on lexicalisation

My view of the relation between the three types of SVCs, as represented in Figure 1, is consistent with the Prototype Theory (PT) framework which incorporates the idea of scalarity whereby we may deal with the fuzzy boundaries and elements contained therein (Rosch and Mervis 1975, Rosch 1978, Rosch 1983).

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[22] The first attestation of the term semantic emergence appears to be Wheelwright, Philip. 1958. "The Intellectual Light." *The Sewanee Review* 66(3):397-412. "To the mind that attunes itself to them they display the always stimulating phenomenon of semantic emergence: new meanings are created by a new way of arranging and emphasizing the semantic elements" (Wheelwright 1958:401).

In this study, therefore, I adopt a PT approach to account for the SVCs as a particular type of SVC may show more of a prototype effect than those at the fuzzy boundaries. To apply this gradient to the concept of emergence is to address the liminal state whereupon we no longer have sodium and chloride, however the two have not yet formed salt. In other words, there is an in-between state that, for whatever reason, may be neglected in other disciplines, but which comes to the fore in linguistics whereby such intermediary stages within the continuum are more readily perceptible. Such a liminal state may best be exemplified in the Bakôngo concept of *Kalunga* "as the threshold" (Desch-Obi 2008:39, Kambon 2018:351). The theoretical implication here is that it is not simply a matter of emergents vs. resultants, but there may be a threshold between the two and fuzzy boundaries that may shift based on ability to perceive, among other potential factors.

Substantiation of the aforementioned continuum of lexicalisation may be found in the form of various tests (morphological, syntactic, semantic, *n.a.*). One method for testing the degree of integration reveals the relationship between the semantic and the syntactic. By inserting conjunctions in between clauses, we can evaluate the potential of the sentence to be interrupted by conjunctions. Insertion of conjunctions can be done in the CCSC type with little or no change of meaning of the sentence. In the case of Partial Lexicalised ISVCs, when conjunctions are inserted, it leads to varying degrees of distortion of the original meaning. When this is done in the case of FL-ISVCs, however, it results in an entirely ungrammatical construction, as shown below in example (4). We call this the Conjunction Insertion Test (CIT).

In the case of FL-ISVCs, insertion of conjunctions almost invariably leads to ungrammatical constructions or constructions that mean something totally different from what is meant by the more idiomatic FL-ISVC structure. In other words, emergents may not be readily separated back into their constituent parts. This is because, unlike in Clause Chaining Serial Constructions (CCSCs) where each verb encodes a separate event, in FL-ISVCs, the multi-verbs in such constructions are used to describe a single event—an emergent property. The basis of the realised structure is semantic. As Osam observes, "[t]he semantic foundation of serialisation has to do with the integration of the subatomic events that are conceived as representing a single event." (1994:193)

An example of the CIT at work is illustrated in the coordinating version of the SVC *Araba tɔ-ɔ nam kyew-ee tɔn-ee* 'Araba bought fish, fried and sold it.' shown in (4a-b) with the insertion of the conjunction *na* which, in Akan, combines clauses and sentences (see Kambon 2012). This type of insertion is not possible as a coordinating structure in the case of the integrated type of SVC such as *Akosua yɛ-ɛ asɔr ma-a Yaw* 'Akosua prayed for Yaw' (benefactive) and results in an ungrammatical construction as shown in (5). In FL-ISVC (6a) *Kofi gye-e me di-iɛ* 'Kofi believed me' attempting to employ the CIT results in an utterance that has been 'de-idiomatised' and, as such, results in a gross distortion of the meaning of the utterance. According to Osam, the difference between the CCSC, which has a corresponding coordinating structure, and the ISVC, which does not, "reflects the degree of tightness in the semantic integration of the verbs involved" (Osam 1994:195).

While tones will be marked on examples throughout the rest of the paper, direct quotes will appear as in the original text without tones:

CCSC

    4.   a.   Araba tɔ́-ɔ̀   náḿ Ø-kyéw-èé   Ø
                    Araba buy-COMPL fish 3SG.SBJ-fry-COMPL   3SG OBJ
                    tɔ́n-èè   Ø
                    sell-COMPL 3SG OBJ
                    'Araba bought fish, fried and sold it.'

          b.   Araba tɔ́-ɔ̀   náḿ nà   ɔ́-kyéw-èé
                    Araba buy-COMPL   fish CONJ 3SG.SBJ-fry-COMPL
                    Ø   nà   ɔ́-tɔ́n-èé   Ø
                    3SG.OBJ   CONJ 3SG SBJ-sell-COMPL   3SG OBJ
                    'Araba bought fish and fried it and sold it.' (Osam 1994:194)

PL-ISVC

    5.   a.   Akosua yɛ́-ɛ̀   àsɔ́ŕ   má-à   Yaw
                    Akosua   do-COMPL prayer give-COMPL   Yaw
                    'Akosua prayed for Yaw' (benefactive)

b.   *Akosua yɛ́-ɛ̀   àsɔ́ɍ   nà   ɔ́-má-à
     Akosua   do-COMPL prayer CONJ 3SG.SBJ-give-COMPL
     Yaw
     Yaw
     'Akosua prayed and gave Yaw.' (Osam 1994:195)

FL-ISVC
    6.

a.   Kofĭ   gyè-è   mé   dì-ìɛ̀
     Kofi   receive-COMPL   1SG-OBJ   eat-COMPL
     'Kofi believed me.'

b.   *Kofĭ gyè-è   mé   ná   dí-ìɛ́
     Kofi   receive-COMPL 1SG-OBJ CONJ eat-COMPL
     'Kofi took me and copulated with me.'

We find that in (6a), the meaning is as a result of the idiomatic combination of the two verbal elements together, while in (6b), the insertion of the conjunction breaks this idiomatic interpretation and forces the reading whereby *gye* 'receive' must be interpreted literally. This causes *di* 'eat' to take on an entirely different idiomatic meaning collocating with a human/animate object. Another test characterizing serial verb expressions on this continuum is the Tense/Aspect/Mood/Polarity (TAMP) retention test (Kambon, Duah and Appah 2018). Examples 7-10 show that while CCSVC nominalisations retain TAMP marking, ISVC nominalisations do not. Although in these examples, the TAMP categories for the CCSVC nominalisation sentences are negation and the completive while for the ISVC nominalisations sentences, the perfect is retained. It should be noted that regardless of the particular TAMP marker in question—whether perfect, negation, completive aspect *n.a.*— the constraint that bars TAMP in SVCN lies with the ISVC and not a particular TAMP category.

CCSC

7.   SVC sentential construction :

a.   Ɔ̀-à-ǹ-té   m'àmánèhúnú   nyìnáá
     3SG-COMPL-NEG-hear   1SG.POSS'troubles   all
     à-ǹ-sèré   mè
     COMPL-NEG-laugh 1SG.OBJ
     'She/he didn't listen to my problems and laugh.'

     Serial Verb Construction Nominalisation (SVCN):

b.   Ǹ-   té   Ǹ-   sèré
     NEG   hear   NEG   laugh
     SVCN: ǹténsèré 'don't hear [my story] and laugh'

     In sentential context as grammatical subject:

c.   Ǹténsèré   sṹ-ṹɛ̀.
     Ntensere   cry-COMPL
     'Ntensere cried.'

     In sentential context as grammatical object:

d.   Ɔ̀-sé   nè   díń   dè   Ǹténsèré
     3SG.SBJ-say-COMPL 3SG.POSS   name   take   Ntensere
     'He said his name is Ntensere.'

8.   SVC sentential construction:

a.   Ɔ̀-à-m̀fá   nè   bɔ́né
     3SG.SBJ-COMPL-NEG-take   3SG.POSS   badness

     à-m̀-fìrí   nó
     COMPL-NEG-from   3SG.OBJ
     'He/she did not forgive his/her badness.'

     Serial Verb Construction Nominalisation (SVCN):

b.   à-   m̀-   fá   à-   m̀-   fìrí
     COMPL   NEG   take   COMPL   NEG   loan
     SVCN: Àm̀fáàm̀fìrí 'the unforgiving one'

In sentential context as grammatical subject:

c.   Àm̀fáàm̀fìrí   bà-à   há.
      Amfaamfiri   come-COMPL   here
      'Amfaamfiri came here.'
      (Kambon, Duah and Appah 2018: 408)

In sentential context as grammatical object:

d.   Yɛ̀-hùnù-ù   Àm̀fáàm̀fìrí
      1PL.SBJ-see-COMPL   Amfaamfiri
      We saw Amfaamfiri.

PL-ISVC

9.   SVC sentential construction:

a.   Ɔ̀-à-ǹ-wú   à-ǹ-sɔ̀ré
      3SG.SBJ-COMPL-NEG-die   COMPL-NEG-rise
      'He/she did not resurrect.'

Serial Verb Construction Nominalisation (SVCN):

b.   ò   wú   sɔ́ré
      +NMLZ   die   rise
      SVCN: òwúsɔ́ré 'resurrection' FL-ISVC

In sentential context as grammatical possessee:

c.   Wsir   wúsɔ́ré   áfáhyɛ́   níé.
      Osiris   resurrection   festival   DEM
      'This is Osiris' resurrection festival.'

In sentential context as direct object:

d.   Wó-gyè   òwúsɔ́ré   dí   ànáá?
      2SG-SBJ-receive   resurrection   eat   Q
      'Do you believe in resurrection?'

10.   SVC sentential construction:

a.   Yɛ̀-à-ǹ-kɑ̌   yɛ̀n   hǒ
        1PL.SBJ-COMPL-NEG-touch   1PL.POSS   body
        à-m̀-mó-ḿ
        COMPL-NEG-strike-in
        'We did not unite ourselves.'

        Serial Verb Construction Nominalisation (SVCN):

b.   Ǹ   kɑ̌   bɔ́   ḿ(u)
        +NMLZ   touch   strike   inside
        SVCN: ǹkɑ̌bóḿ(u) 'unity'

        In sentential context as grammatical subject:

c.   Ǹkɑ̌bóḿ   nà   ɛ̀-hǐɑ̌.
        Unity   FOC   3SG.SBJ.INAN-needed
        'It is unity that is necessary.'

        In sentential context as grammatical object:

d.   Pràɛ̀ɛ́ gyìnà   hɔ́   mà   ǹkɑ̌bóḿ.
        broom stand   there   give   unity
        'The broom stands for (symbolises) unity.'

Thus, we find that morphological, syntactic, and semantic tests are useful in substantiating the basis for our continuum-based view of SVCs in Akan. The primary takeaway from these tests is that some ISVC constructions—prior to and after nominalisation—are more prototypically noun-like (stripping TAMP information) while others are more verb-like, retaining it. On the other side of the continuum are CCSCs which retain various finite characteristics upon nominalisation, and which may or may not retain TAMP marking dependent on whether or not such marking was present in the construction upon which the CCSCN is based. The correlation between these criteria is that each of them reflects the functional, cognitive and semantic bases for phenomena that manifest emergent properties semantically, lexically, morphologically and syntactically.

Serial Verb Constructions can and have been categorised in a variety of ways in the literature. Serial verbs can be categorised based on semantic categories (Li and

Thompson 1973, Jansen and Muysken 1978: 7-8), based on transitivity (Osam 1994: 196-197), argument sharing (Foley and Olson 1985: 38, Crowley 1987, Osam 1994: 197, Hiraiwa and Bodomo 2008a) or along a variety of other lines. Along these lines, Akan serial verb constructions of various kinds are exemplified below.

1.1 Serial Verb Constructions of Various Kinds

It has been attested in the literature that cross-linguistically, and in Akan, specifically, there are various kinds of SVCs. The relationship between each of the verbs and the nominal arguments associated with them in terms of argument sharing provides another parameter demonstrated to be useful for sub-categorisation (see Foley and Olson 1985, Crowley 1987:38, Osam 1994:197, Hiraiwa and Bodomo 2008a).

Same-Subject Serialisation
The first type is the Same-Subject serialisation. This means that the subject of the construction is the same for both the first and the second verbs in the SVC. The next examples from the Fante dialect of the Akan language come from Osam (1994:198):

> 11. a. Kofi tɔ́-ɔ̀ èdzìbàń má-à àbòfrá nó
> Kofi buy-COMPL food give-COMPL child DEF
> 'Kofi bought food for the child.'
> b. Kofi yí-ì sékáń nó brɛ́-ɛ̀ Araba
> Kofi take-COMPL knife DEF bring-COMPL Araba
> 'Kofi took the knife and brought it to Araba.'
> (Osam 1994:198)

Switch-Subject Serialisation
The next type is switch-subject serialisation (Foley and Olson 1985:25, Crowley 1987:39) which corresponds to causative SVCs wherein "the object of the first verb and the subject of the second verb are co-referential" (Osam 1994:198).

12. a. Esi   má-à   Kofi   dzí-ì   èdzìbàń   nó.
       Esi   make-COMPL Kofi eat-COMPL   food   DEF
       'Esi made Kofi eat the food.'
   b. Kofi   má-à   Esi   bɔ́-ɔ̀   fámú
       Kofi   make-COMPL   Esi   fall-COMPL   ground
       'Kofi made Esi fall down.' (Osam 1994:198)

Combined-Subject Serialisation

The next type is combined-subject serialisation. In this type, "the subject and direct object of the first verb are both subject of the second verb" (Osam 1994:201, Osam 2004:43). This type of associative NP also occurs in Akan as exemplified below:

13. a. Kofi   nyé   Ama   bá-à   fíé
       Kofi   accompany   Ama   come-COMPL   home
       Ama accompanied Kofi home/ Kofi came home with Ama.
   b. Kofi   nyé   bányín nó   twì-twá-à   ǹdùá nó
       Kofi   accompany   man   DEF   cut-DUP-COMPL   trees DEF
       Kofi cut the trees together with the man.
       (Osam 1994:201, Osam 2004:43)

Nyé is likely analysed by Osam as a verb rather than a coordinator due to grammatical relations whereby *nyé* appears with subject pronoun forms that are known to only occur with verbs (*ɛ.n. ɔnye no bɔkɔ* 'He/she will accompany him/her to go.' The final type posited by Osam based on argument sharing parameters is the multiple-object type of serial verb construction:

Multiple Object Serialisation:
14.   a.   Kofi   tóẃ-ẁ   ɔ̀sóń   nó   kú-ù   nò
              Kofi   shoot-COMPLelephant DEF kill-COMPL   3SG.OBJ
              'Kofi shot and killed the elephant.'

       b.   Kofi   bɔ́-ɔ̀   àbòfŕá nó   pírà-à   nò
              Kofi   hit-COMPL   child   DEF   hurt-COMPL 3SG OBJ
              'Kofi hit and hurt the child.' (Osam 1994:196)

In the final analysis, or any system of categorisation to be valid in the sense of telling us what native speakers know about their language, there must be independent evidence from within the language that substantiates any given method of categorisation. In other words, an independent variable is required that shows divergent behaviour for prototypical members of each category proposed in contrast to the behaviour of prototypical members of another category. In this study, we categorise serial verbs along the lines of degrees of semantic integration and lexicalisation. This begs the question of exactly how one tests SVCs to see if categorisation based on semantic integration and lexicalisation is valid or not.

In this context, nominalisation serves as a sort of extended test wherein we would expect for nominalisation behaviour to be different for each type of category proposed (based on degree of emergent semantic integration and concomitant lexicalisation) in that nominalisation SVCs are expected to demonstrate evidence of a continuum from fully lexicalised (FL-ISVC) to ad hoc clause chaining (CCSC) nonce forms through different nominalisation behaviour for each type. If so, it is expected that the most highly lexicalised serial verb constructions would be the ones that can be nominalised most easily and extensively. This means that it is expected and borne out by the data that nearly all FL-ISVCs will be able to be nominalised while almost no PL-ISVCs will be nominalised with room for variations along the fuzzy boundaries of the gradient. Nevertheless, the SVC nominalisations are functionally equivalent in terms of performing functions that nominals do and demonstrating grammatical relations consistent with those expected for nominals.

Hypothetically speaking, the more lexicalised a Serial Verb Construction is (*ɛ.n.*, lexicalised to the point where it functions as a de facto single verb) the more likely it is to share the behaviour of single verbs. Therefore, it is expected that the degree to which a single verb can be nominalised in a language should be, more or less, the degree to which SVCs that are highly lexicalised and therefore act as a single verb (in the minds of native speakers) should be able to be nominalised. Therefore, our hypothesis is that in Akan, more lexicalised SVCs should show a greater degree of nominalisation than less lexicalised ones. Serial verb constructions with lesser degrees of semantic integration and, therefore, lexicalisation would be expected not to be able to be nominalised to the same degree if at all. Degrees of semantic integration, like degrees of lexicalisation, may be understood in terms of a scale of progressively less and less conceptual distance as illustrated below:

Separate sentences → Coordination → CCSC → PL-ISVC → FL-ISVC

Figure 4: Emergence of progressively greater degrees of lexicalisation (SVCs in red)

In this study, each type of SVC is analysed on the basis of how it is nominalised, the degree to which nominalisation occurs and whether nominalisation can occur at all. In the course of the study, various sources were consulted in the three major literary varieties of Akan: Asante Twi, Fante and Akuapem Twi. Further, native speakers of each of these varieties were consulted to ascertain the goodness of various attested serial verb nominals (SVCNs) in Akan.

In terms of identification of types of SVCs, we follow Osam (1994: 238) in that Full Lexicalised-Integrated Serial Verb Constructions (FL-ISVCs) can be analysed as lexicalised idioms and, thus, we argue that criteria used to characterise idioms may be used to successfully identify FL-ISVCs. Idioms are characterised here as emergents of components lexically and semantically in that the whole idiom is greater than and different from its component parts.

In reference to idioms in general, Barkema (1996) states that "[p]ractically all such expressions are more or less limited in their morpho-syntactic freedom, that generally substitution of lexical items in these expressions is limited to some extent and that there are many with idiosyncratic semantic characteristics" (Barkema 1996: 125). There are several distinct characteristics outlined by Barkema (1996) that are useful in analysing degree of idiomaticity and, thereby, assisting in the identification of FL-ISVCs. These are:

- Flexibility - Prototypical idioms are expected to be largely inflexible in terms of morphological marking.
- Collocability - Prototypical idioms are expected to have components that co-occur consistently and with a particular ordering.
- Compositionality - Prototypical idioms are expected to be non-compositional $\varepsilon.n.$, the semantics of the whole are greater than and different from the meaning of individual components. This is probably the most important characteristic with regard to idiomaticity.

- Familiarity - Prototypical idioms are expected to be institutionalised and highly recognised in their non-compositional form in the context of the speech community in which they occur.

As may be readily evident, the characteristic most relevant to our introduced concept of semantic emergence (SE) is that of compositionality, though the others, while seemingly tangential, may also be relevant to discussions of emergence within the scope of semantics and beyond. In other words, idioms may be thought of as emergents as they occur within the context of language, while emergents may be thought of as idioms as they occur outside of this context. Salt, as it were, is an idiom.

Each FL-ISVC was, therefore, evaluated, identified, and categorised with these idiomaticity criteria in mind. In this line of thinking, one of the fundamental theoretical assumptions utilised in the study is that the more salient an event type becomes within a speech community, the more idiomatic and less compositional it becomes.

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                           [Stage 1]
                       Environment/World

                             |
                             v

                           [Stage 2]

        Salient Concept/Situation/Event in Minds of Speech Community Members

              /                  |                   \
             v                   |                    v

        [Stage 3]                |              [Stage 3]

Concept/Event Expression: Lexical V     Concept/Event Expression: SVC

        |                        |                    |
        v                        v                    v

     [Stage 4]               [Stage 4]            [Stage 4]

  Nominalised Verb    Borrowed Lexical Item         SVCN

Figure 5: Route to SVCN (Kambon 2012:38)
```
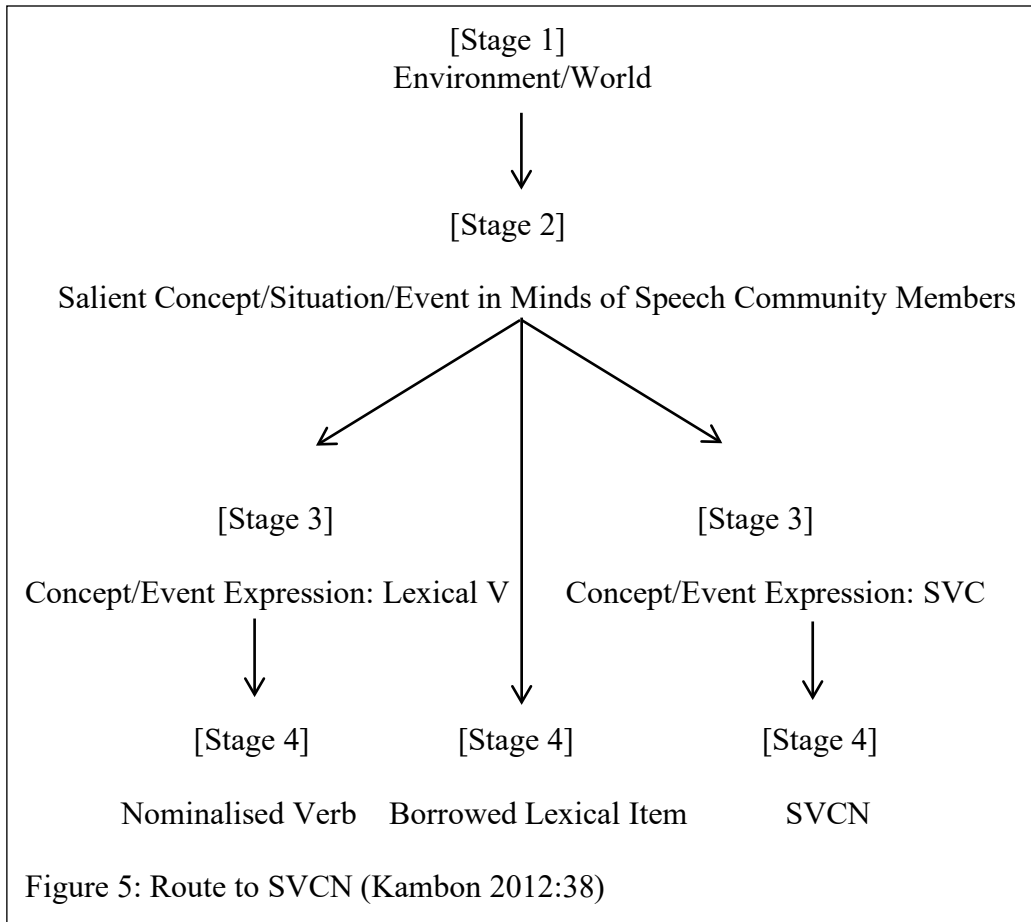
The process outlined in Figure 3 shows a progressive movement towards greater emergent semantic integration and the subsequent reflection of this semantic integration through lexicalisation in serializing languages such as Akan. In other words, over time certain events come to occur more and more regularly, typically in a particular sequence, in the perceived world in a given culture. In serializing languages, these events may be expressed in two or more verbs that typically co-occur in a particular order. According to Rosch (1983), this leads to greater levels of salience (physiological salience, social salience, salience in formal systems, etc.) (Rosch 1983:77-78). Eventually these separate verbs co-occur to the point of

forming a collocational unit, in that they must, for native speakers, necessarily occur together to get the meaning specified or, at times, any meaning at all. At such a stage, individual verbal elements cannot be removed without leading to what is judged by native speakers as an irregular, ungrammatical or even an impossible utterance. For Akan, this is the consistent pattern for FL-ISVCs. Rosch sheds light on the fact that "the tendency to refer back to particular events that have been experienced can be seen as a stubborn empiricism. It is as though subjects were always slightly doubtful of abstract or theoretical information when it contradicts what they have seen or heard" (Rosch 1983:76). This notion is directly applicable to SVCs and SVCNs that "should" be good formally but are judged by native speakers as being ungrammatical because they lack the "culturally relevant empiricism" whereby the native speaker does not see the event as a salient distinct event type. According to Durie (1997:321):

> If a non-serializing language has available a single lexical verb to represent a particular situation, then this reflects the codification of that situation by the speech community as a salient distinct event type. We will expect on the one hand that different languages will have many verbs which are quite similar in meaning, because of universal similarities in human environment and experience […] My main point here is that the verbal system of a language evolves as a categorisation of the event-types that are salient, or communicatively in demand for the speech community. Sub-communities develop their own sub-inventories of verbs, to distinguish salient event-types of significance to them (e.g. θ-mark and c-command).

The key points to be highlighted here are 1) the idea of salient event-types and 2) the degree to which the verbs of various languages are mitigated by human environment and experience. The former notion of salient event-types is one of the components of what is referred to in this article as SVCs with a high degree of idiomaticity (as familiarity or institutionalisation is one of four useful means for identification of FL-ISVCs and other highly idiomatic constructions). This salience itself may also be thought of as an emergent property. Idiomaticity and lexicalisation expressed in morphosyntactic structures follow naturally from progressively greater degrees of semantic integration. It is indeed argued here that the familiarity of use of the

idiomatic SVC concretises it as an institutionalised, culturally salient form. Several stages are postulated in the development of a highly idiomatic ISVC:

1)   Emergence of salience of an event or multi-stage event in the perceived world. This event becomes verbalised in the serializing language. As the language in question is a serializing one, it expresses these multi-stage events in Chaining Serial Constructions (CSCs), but with each event still essentially being viewed as conceptually separate and separable (the fact of which, in Akan, can be tested by means of the Conjunction Insertion Test) (Agyeman 2002, Kambon 2012).

2)   The frequency of co-occurrence of these multi-stage events expressed through two or more verbs then becomes more and more common, on par with the salience of the event in the perceived world. This multi-stage series of sub-events develop the emergent property of greater collocationality, *ɛ.n.*, necessarily occurring together. This collocationality is accompanied by the linguistic phenomenon of Partial Lexicalisation.

3)   Eventually, these co-occurring events cease being viewed as distinct events. At this point, the construction is no longer compositional; *ɛ.n.*, no longer simply the sum of its constituent parts. It exemplifies the concept of emergence in the context of language—specifically with regard to semantics. This is the point at which the SVC is thought of as belonging to the more idiomatic portion of the semantic integration continuum in the sense that the term is being used in this study. Non-compositionality is contemporaneous with the linguistic phenomenon of Full Lexicalisation whereby two formerly disparate lexemes come to behave as one in a variety of linguistic contexts, particularly as evinced through grammatical relations. The central point that is being argued here is that the formal and semantic phenomena that take place in the development of SVCs along the gradient of CSC to PL-ISVC to FL-ISVC are as a result of functional processes. (Kambon 2012)

In relation to the development of SVCs, Durie proposes that "A concomitant feature of serialisation is that high frequency serialised verbs typically develop meanings distinct from their non-serialised use" (Durie 1997: 321). These distinct meanings tend to be idiomatic and exhibit a lesser degree of compositionality whereby the meaning of the whole is different from the simple addition together of the meanings of a given construction's constituent parts: semantic emergence (SE). It is important to note here, however, that not each and every individual SVC in a given category of lexicalisation must, necessarily, follow a route of unilineal evolution from lesser to greater lexicalisation.[23] Indeed, once certain base template forms or schemata are available in the language's repository, new SVCs of whatever degree of lexicalisation can be created on the basis of these templates according to the needs of the language community as new concepts and phenomena are encountered or introduced.

1.2 Nominalisation in Akan

An overview of nominalisation in Akan is given below on a typological basis categorised by transitivity. The tabular data below comes from Adomako's (2013:49-50) study on verbal nominalisation as a derivational process. In this study, nominalisation is addressed in terms of types of prefixes in correlation with transitivity:

Transitive verbs with vowels as nominal prefix

15.	Stem	Gloss	Nominalised	Reduplicated	Gloss
a.	kó	'fight'	ɔ̀/àkó	*ɔkoko/akoko	'battle/war'
b.	hìà	'need/want'	òhìá	*ohiahia/ʔahiehia	'poverty'
c.	táń	'hate'	ɔ̀táń	*ɔtitan	'hatred'

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[23] It is worth noting here that in the current discussion of lexicalisation, we assume a diachronic perspective. Given the dearth of sufficient historical data to trace the development of constructions discussed herein, discussions of the development of idiomatised forms are speculative in nature based on analogy with largely synchronic phenomena.

Transitive verb stems with nasal nominal prefixes.

16.	Stem	Gloss	Nominalised	Reduplicated[24]	Gloss
a.	pàtà	'compensate'	m̀pátá	*m.pata-pata	'compensation'
b.	bòà	'help'	m̀mòá	*m.boa-boa	'help'
c.	hyìrà	'bless'	ǹhyìrá	*n.nhyira-hyira	'blessing'

Intransitive verb stems with vowel nominal prefixes.

17.	Stem	Gloss	Nominalised	Reduplicated	Gloss
a.	sá	'dance'	àsá	*a.sa-sa	'dancing'
b.	nyíní	'grow'	ènyíní	*e.nyini-nyini	'growth'
c.	mùnà	'frown'	èmùná	*e.muna-muna	'a frown'

Irregular verb stems with nominal prefix and suffix

18.	Stem	Gloss	Nominalised	Gloss
a.	bó/bóró	'beat (intrans)	ɛ̀bóróɔ́	'beating'
b.	bó/bóró	'get drunk'	ɛ̀bóróɔ́	'drunkenness'
c.	sòrò	'to be naughty'	ɛ̀sòròɔ́	'naughtiness'

As can be seen from the data above, verb phrases can be nominalised in Akan. The significance and implication of this data is the entailment that lexicalised verb phrases—those verb phrases that come to be treated as a single lexeme—should also be able to be nominalised similarly. In section 3.3 we will further show that clauses can also be nominalised wholesale. While a thorough treatment of nominalisation in general in Akan is beyond the scope of the current work the categorisation above is useful in providing background information on how the process works in general for a deeper understanding of SVCN.[25]

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[24] It should be noted here that the examples the author gives here technically constitute duplication rather than reduplication, which, by definition should be iterative to a degree more than two (2) since having one copy is implied in the term duplication already.

[25] For further reading on nominalization in Akan in general, see Adomako, Kwasi. 2013. "Verbal Nominalization as a Derivational Process: The Case of Akan." *Ghana Journal of Linguistics* 1(2):43-

2. Methods

The major specific open research question addressed in this study is whether degrees of Semantic Integration and associated Lexicalisation functioning as independent variables will display differences in nominalisation behaviour among the three (3) lexicalisation-based categories of SVCs proposed for Akan. Thus, SVCs were categorised on the basis of degrees of lexicalisation with the anticipation that when the degree of lexicalisation changes, nominalisation behaviour would also change. As such, nominalisation serves as the dependent measure. Consequently, a questionnaire was designed to study whether or not native speakers nominalise Full Lexicalised-Integrated Serial Verb Constructions (FL-ISVCs) to the same degree as Partial Lexicalised-Integrated Serial Verb Constructions and/or Chaining Serial Constructions. If and when there are clear differences with regard to patterns of nominalisation across categories, a direct correlation can be made linking lexicalisation (derived from cognitive semantic integration as an emergent property) to nominalisation behaviour and lexicalisation can be properly identified as the major determining factor in a given SVC's ability to nominalise in Akan. Hence, the study will substantiate the current categorisation based on lexicalisation as a valid one and, at the same time, demonstrate the cognitive basis for the linguistic phenomenon of nominalisation.

There are two major works on semantic integration and lexicalisation of SVCs in Akan from which examples of Akan SVCs of different degrees of lexicalisation were initially extracted: Osam (1994) and Agyeman (2002). Both of these seminal works gave relevant examples of the three levels of lexicalisation of Akan SVCs; FL-ISVCs, PL-ISVCs and CCSCs which show prototypical patterns with regard to nominalisation in each case. Questionnaires were then developed using these more prototypical examples and several others identified using idiomaticity criteria as outlined above with the aim of ascertaining native speaker judgments of the most unambiguous instantiations of each lexicalisation-based category according to the two aforementioned authors. Using these examples, similar SVCs were identified from within four of the most exhaustive sources available in Akan which also span

64., Appah, Clement K. I. 2005. "Action Nominalization in Akan." Paper presented at the Annual Colloquium of the Legon-Trondheim Linguistics Project, 18-20 January 2005., and Obeng Gyasi, S. 1981. "Nouns and Nominalization in Akan with Special Reference to the Twi Dialects." BA Long Essay. University of Ghana.

over 80 years of the development of the language: namely, *The Dictionary of the Asante and Fante Language called Tshi (Twi)* (Christaller 1933), *Twi Nsɛm Nkorɛnkorɛ Kyerɛwbea* wordlist (Education Department of Ghana 1971), Boadi (2005) *Twi Kasa Mmara ne Kasɛsoɔ* and Bannerman *et al.* (2011) *Mfantse Nkasafua na Kasambirenyi Nkyerɛase: Dictionary of Mfantse Words and Idioms*. These sources were selected on the basis of their comprehensiveness and the diversity of time periods in which they were produced. They were also selected due to representation of the three major literary dialects of Akan. Once nominalisation behaviour from the most prototypical examples of lexicalised and non-lexicalised SVCs was clearly identified from Osam (1994) and Agyeman (2002), these additional sources added breadth and depth by providing many other SVC/SVCN examples identified on the basis of Barkema's (1996) idiomaticity criteria. Within these new examples, a comparative minority was identified in each case (FL-ISVCN, PL-ISVCN, and CCSCN) which did not conform to the prototypical examples given by Osam and Agyeman. From the attested sources, therefore, we were able to successfully identify SVC/SVCN combinations that displayed the most salient prototype effects for the category in question as well as those few which may occur at the fuzzy boundaries as exemplified through nominalisation behaviour.

Once identification of several hundred SVCs was complete, native speaker data collection was undertaken occurring in two phases: Phase One (P1) and Phase Two (P2) totalling one hundred (100) participants. P1 Akan FL-ISVC data are based on seventy-five (75) usable questionnaires out of over 500 questionnaires distributed representing speakers of Asante Twi, Fante and Akuapem Twi. Other questionnaires returned were not usable due to incompleteness. The questionnaires were designed to study whether or not nominalisation occurs for the three types of SVCs. The independent variables were the serial verb constructions of each degree of lexicalisation set out in tabular format as inputs. The dependent measures were the form of the nominalisation output data provided by speakers. As such, a correlation was established with regard to the degree of lexicalisation which effectively served as a predictor of nominalisation behaviour in Akan SVCs substantiating the category as a valid one.

Phase One (P1) of the study focused primarily on literate (at least) bilingual youth representing speakers of Asante Twi, Fante and Akuapem Twi. For Phase Two (P2), the total number of participants was twenty-five (25). In P2 field work, 25 elders, the

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majority of whom were non-literate, were consulted also representing the three major literary dialects of Akan. Twenty-two of the participants were over the age of 60, while 2 were in the range of 50-60 and 1 was in the range of 40-50. Eleven of the 25 had never been to school. Others who had been to school attained various levels of completion. While the focus of P2 was on non-literate speakers, because the research was carried out organically in varied settings, at times, elders were included who were, indeed, literate to some degree due to them fitting the age range and/or dialectal prerequisites. With the exception of 4 Kumasi Asante Twi speakers and 1 Akropong Akuapem Twi/Asante Twi speaker, P2 interviews were conducted orally in focus groups based on shared dialect. In the other 5 cases mentioned, oral interviews were done individually.

Participants were selected using purposeful sampling (Patton 2002:230) with the intent of gaining a greater amount of insight into issues of central importance to the study, namely nominalisation behaviour. Participants were selected on the basis of various criteria collected in the bio data: primarily dialect of Akan spoken, literacy (or lack thereof) and age. The rationales for selection on the basis of these factors were inclusivity (major literary dialects), broadness of educational backgrounds (no formal education to higher education) and for diachronic/synchronic representativeness (age). While purposeful sampling allowed us to select information-rich cases for in-depth study, basing the selection on the aforementioned criteria was an intentional effort to mitigate bias and narrowness in the study.

3. Results

The results from the study show that over 98% of all FL-ISVCs (144 of 146) identified have nominal counterparts while less than 3% (17 of 690) of all PL-ISVCs identified have nominal counterparts. These results were not surprising due to the anticipated role of lexicalisation in making erstwhile disparate verbs function as one subsequent to semantic integration in the perceived world as reflected in the language. CCSCs, however, seemed to nominalise haphazardly as frozen sentences, proverbs, idioms, and figures of speech which primarily function as denotata and designata within the language. While there was some degree of interdialectal variability with regard to individual SVCNs, the pattern of nominalisation behaviour on the basis of degrees of semantic integration and lexicalisation remained consistent across dialects.

This chapter engages several philosophical and theoretical issues related to the nature of categorisation along a Prototype Theory (PT) framework. Prototype Theory proved useful due to its utilisation of concepts of scalarity, gradients and continua to account for the 2-3% of otherwise anomalous cases found at the fuzzy boundaries between delineated categories. Major findings will be discussed below on the basis of lexicalisation-based categorisation. The relevance of these findings with regard to ongoing debates about the nature of emergents and resultants will be discussed in the conclusion.

3.1 Discussion: Full Lexicalised-Integrated Serial Verb Construction Nominalisations as Emergents

A major aim of my questionnaire was to determine whether nominalisation behaviour showed a correlation with lexicalisation. Secondarily, to evaluate the categorisation of SVCs, Barkema's (1996) idiomaticity criteria were appealed to in order to determine flexibility, collocability, compositionality and familiarity with the expectation that FL-ISVCs would be largely inflexible, demonstrate a high degree of collocability, be non-compositional and highly familiar.   These measures of identification will be appealed to below in the course of our discussion of major findings and as the primary way upon which identification of an SVC as the highly idiomatic Full-Lexicalised type was made.

A notable finding about FL-ISVC nominalisation was that Relator Nouns, Postpositions, Demonstratives and Direct Objects (all non-verbal elements) tended to be evaluated by native speakers as semantically integrated parts of the SVCN (cf. Kambon, Osam and Amfo 2015). It is possible that this is because one verb in the SVC was considered as an inherent complement verb (ICV). While this may be dismissed as a fluke, a clear pattern emerged when we look at other Full Lexicalised SVCNs wherein respondents consistently did the same thing yet did not do so in the case of Partial Lexicalised SVCNs which are highly collocational, yet which remain semantically compositional. This indicates that in the case of FL-ISVCs, lexicalisation occurs not only between the verbs in the SVC but is rather extended to other elements of the complex as expected. This is why it is important to use the term SVCN as introduced by Kambon, Osam and Amfo (2015) rather than simply SVN. This observation has serious implications for many widely accepted

definitions of SVCs such as Aikhenvald's (2006: 1) definition of SVCs as "a sequence of verbs which act together as a single predicate, without any overt marker of coordination, subordination, or syntactic dependency of any other sort" or Durie's (1997: 289-290) definition of archetypal SVCs as consisting "of a sequence of two or more verbs which in various (rather strong) senses, together act like a single verb." These are very verb-centric definitions which fail to capture a linguistically significant generalisation with regard to Serial Verb Construction nominalisation in Akan. In these definitions and in the literature in general, we find that time and time again no mention is made of arguments of the verbs except in the more restricted context of argument sharing (Baker 1989, Aikhenvald and Dixon 2006, Hiraiwa and Bodomo 2008b). Generally speaking, these discussions do not extend to the degree of lexicalisation. Lexicalisation, however, was found to be quite pertinent for native speakers of Akan.

15.   o   di   ma
          +NOM   eat   give
          SVCN: odima 'intercession'

It should also be noted that in glosses, such as *di* 'eat' and *ma* 'give', the most prototypical meanings are given, with due note that *di* alone has over 100 senses and connotations ranging from consumption of food to copulation to engaging in any specific activity which is the direct object of *di*. Typically, the prototypical meaning is the one that is first thought of by the native speaker due to prototype effects. It is also, typically, the first sense of the word listed in dictionaries and glossaries and other sources consulted within this study. *Di...ma* was given to P2 participants to ascertain familiarity. Fante speakers chose the form *dzima* without prefix for a total of 18.2% of the respondent totals. Asante speakers produced the form *odima* for a total of 27.3% who found this form to be acceptable. As was the case for most of the data, the Akuapem speakers were by far the most conservative with all those interviewed stating that *di...ma* cannot be nominalized, although the Akuapem speaker who also identified as an Asante[26] produced both *odima* and *dima*. Additionally, some of the Asante and Fante speakers had a problem with it for a total of 31.8% of respondents who stated that there is no nominal form for *di...ma.* In

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[26] One Akuapem speaker, while born at Akropong, self-identified as an Asante due to matrilineal descent and his mother being an Asante.

retrospect and in future research, it may be beneficial to present speakers with *odimafo* 'advocate'. However, because –*fo* can be added to most of the SVCNs to derive a noun meaning roughly 'one who engages in X activity habitually/professionally', for the current study, it would have been unwieldy to test this suffix against all SVCNs since this, in and of itself, can form a study.

The next set of SVCNs is grouped due to the fact that each SVCN is derived from the same verbal elements; *ka* and *kyerɛ*. As is the overwhelming pattern for derived Serial Verb Construction Nominals, typically, derivational morphology in Akan is heavily prefixing. According to The World Atlas of Language Structures Online, Akan is listed as "strong prefixing" in reference to the category "Prefixing vs. Suffixing in Inflectional Morphology" (Dryer and Haspelmath 2012). While derivational morphology is missing from the list of linguistic characteristics of Akan, the current study shows that Akan is also strongly prefixing in this area as well. This is why *nkakyerɛe* is relatively unique in the scheme of derivational morphology as it pertains specifically to serial verb construction nominalization.[27] *Ɔkakyerɛ* is also derived from SVC *ka...kyerɛ*, however as we see, the changing of the initial prefix changes the meaning of the resulting SVCN. In both cases, the aspects of familiarity, collocability, compositionality and flexibility show both to be typical of FL-ISVCs as lexicalized idioms and their nominalized counterparts.

| 16. | a. | N | ka | kyerɛ | e |
| | | +NOM | speak | show | +NOM |

　　　　　　SVCN: nkakyerɛe 'repeated telling'

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[27] It should be noted that certain instances of derivational morphology are prototypically prefixing and suffixing in Akan such as that which pertains to human beings with *ɔ-...-ni* or *ɔ-...-fo* as prototypical for the singular and *a-...-fo* or *N-...-fo* for the plural. Here, we are focusing on abstract nouns as derived from Serial Verb Constructions rather than on the latter (which indeed may be more productive, but this is beyond the scope of this thesis). An example par excellence of dialectal variation in regard to suffixing in abstract nouns is *nnɔbaeɛ* (Asante), *nnɔbae* (Akuapem) and *ndɔbaa* (Fante). While Akuapem and Fante are not typically known for their nominal suffixes, we see here that, in this case, each dialect does have nominal suffixing options available to it.

b.   ɔ/ø   ka   kyerɛ
          +NOM   speak   show
          SVCN: ɔkakyerɛ 'information, knowledge, wisdom'

Ɔkakyerɛ was also one of the questionnaire items for both P1 and P2. When given the verbal elements *ka* and *kyerɛ*, the majority, 47% of P1 respondents, selected *ɔkakyerɛ* as the appropriate form. An interesting inclusion was *tekakyerɛ* which is most known in the proverb *Tekakyerɛ bɔ kuro* 'gossip ruins a town'. Although the verb *te* was not included in the questionnaire, apparently the mind of the respondent went to the form that had *kakyerɛ* in it that was most familiar. While no particular definition stuck out as a majority in the meanings attributed to *ɔkakyerɛ*, most of those given are relatively synonymous or, at the very least, pertain to the multifaceted meanings of *ɔkakyerɛ* as 'telling'. Forty-five percent of the total number of P2 respondents produced the form *kakyerɛ*, 22.7% of the total number of P2 respondents produced *ɔkakyerɛ*, and 18.2% produced *nkae*, while 4.5% percent produced *nkakyerɛ. Nkae* was produced solely by Fante speakers. There was some discussion of some variation of *ɔkakyerɛ* as a noun, but the end result was that *nkae* is the best way to express the concept in Fante. Koforidua Asante Twi speakers were split between *kakyerɛ* (4 speakers) and *ɔkakyerɛ* (3 speakers). Four (4) Akuapem respondents surveyed chose *kakyerɛ* while one, also a speaker of Asante, produced *ɔkakyerɛ*. Variation was found in Kumasi respondent answers with 2 for *kakyerɛ* and 1 for *ɔkakyerɛ*. The most variation was found amongst Fante speakers who produced *nkae, nkakyerɛ, ɔkakyerɛ* and *kakyerɛ*.

In giving the meaning of *ɔkakyerɛ*, the largest majority of P1 respondents abstained from the questionnaire item with 49.3% skipping the item entirely. The next highest percentage was 'not sure' with 36.8%. Even though the majority agreed on the same SVCN form, comparatively few knew the actual meaning of *ɔkakyerɛ* with only 21.1% giving the meaning as 'telling' or some variation thereof. An additional 13.2% incorrectly gave the answer as 'dictation' which is the correct answer for the near-homonym FL-ISVC *ka...kyerɛw*, but not *ka...kyerɛ*. For both P1 and P2 speakers, there seems to be variation in the correct prefix that this form should have and whether there should be a prefix at all. This may be a side effect of the loss of the pre-existing noun class system argued for by Osam (1993) with an after effect being that prefixes that once served as noun class markers have been reanalyzed

and/or lost synchronically. In terms of the actual understanding of what the SVCN means, P2 speakers seemed to have a better command of *(ɔ)kakyerɛ*.

In terms of the verbs from which *ɔkakyerɛ* is derived, almost universally, P1 respondents were able to determine *ka...kyerɛ* as the source at 92.6%. Indeed, this was the only answer given by those who gave any answer to this item.

P1 respondents were equally clear on the meaning of the two verbs with *ka*'s meaning given as 'say/speak/tell' at an even higher 96.2% and *kyerɛ* translated as 'show/teach' at 85%. The remaining 5% of those who gave an answer gave 'report' as their answer. It should be noted that some answers, such as 'say, speak, tell' were grouped together because they are synonyms in English. Throughout the study, respondents who gave answers that were synonymous were grouped together based on the best judgment of the researcher as a native speaker of English.

Another FL-ISVC, *hùrù(w)/hùrì...sí* is in line with other FL-ISVCs as it has both a literal interpretation as well as a figurative, metaphorical interpretation (an emergent property). On a literal level, *àhùrùsí/àhùrìsíé* is simply jumping up and down, but on a non-literal level, it carries the meaning of rejoicing in general. Its non-compositional nature places *àhùrùsí/àhùrìsíé* firmly in the realm of prototypical FL-ISVCs but with a view into its etymological origins. This is part of why, when it comes to emergence, I argue that there may be a gradient of varying degrees to which the components may be discerned lexically and semantically from the individual parts of which they are composed. In other words, it is not simply always a matter of either/or dichotomisation between resultants vs. emergents. Per the idiomaticity criteria delineated above, *àhùrùsí/àhùrìsíé* is also inflexible and collocationally closed.

19. à   hùrù(ẁ)/hùrì   sí
     +NMLZ   jump   alight
     SVCN: *àhùrùsí/àhùrìsíé* 'rejoicing'

The next FL-ISVC, *fòrò...siàn(è)* 'circulating (of blood)' also has a PL-ISVC counterpart which is not idiomatic, but which simply means 'climbing and descending'. To get the idiomatic reading, the nominalised SVC must appear collocationally as *mógyá…dí…àfòròsíáné* 'blood engages in climbing-descending.'

Thus, we have a case of both a literal meaning (PL-ISVC as semantic resultant) and idiomatic meaning (FL-ISVC as semantic emergent) co-existing in the language. In the idiomatic extension, *fòrò...sìàn(è)* can be interpreted as good blood circulation through the body as a marker of good health. In the PL-ISVC instantiation, however, we are dealing with what is referred to as the literal 'counterfeit form' by Barkema (1996: 140) in his conceptualisation of idiomaticity. According to Barkema:

> Many idiomatic expressions have equivalents in the form of a 'counterfeit form'. Such a form has the same syntactic form and contains the same lexical expression, but, because of the way in which it is used, has a meaning that is the combinatorial result of the meanings of the lexical items in the construction (1996: 140).

These counterfeit forms are the equivalent of resultants for the purpose of the current discussion. ISVCs typically contain 2 verbal elements in contrast with CCSCs, which can contain 2 or more verbs with no upward bound. Like other types of idioms, *hùrì...sí*, *fòrò...sìàn(è)* as well as other FL-ISVCs have both literal and idiomatic interpretations available. In the case of *hùrì...sí* the meaning can be simply 'jumping up and down in place' or the idiomatic 'rejoicing' in the context of nominalisation as in *dí àhùrìsíé* 'engage in rejoicing'. Here, even though the idiomatic meaning exhibits semantic emergence, there is still a perceptible degree of traceability back to the individual components from which the idiom is derived. Similarly, FL-ISVC, *dí...fòrò...sìàn(è)* 'to circulate' after nominalisation and co-occurring in the sequence of *mógyá...dí...àfòròsíáné* 'blood engaged in climbing and descending' seems to have two meanings: one, a literal compositional meaning of 'climbing and descending' another, a non-compositional meaning of 'to circulate' as in how blood in the body circulates. Similarly, in English, the idiom 'he kicked the bucket' can refer to someone literally kicking a bucket or the idiomatic usage in the sense of a glib manner of referring to someone's death.

In its PL-ISVC configuration, Boadi gives partially duplicated forms of *fòrò* as *fòfòrò* (Boadi 2005: 608) and *sìànè* as *sìànèsìànè* (Boadi 2005: 617). When each of these is partially duplicated, each one is expected to hold in the PL-ISVC structure without any significant change of meaning apart from denoting repetition of each or both actions.

The lessons we can glean from such forms are that Akan FL-ISVCs, which are treated here as lexicalised idioms, like idioms elsewhere in the language and cross-linguistically, may co-exist alongside the literal non-idiomatic forms from which they may have initially arisen. While not all idioms are derived from regular grammatical expressions, these are examples of those that are and whose literal counterparts can still be found in the language. Thus, there is a modicum of semantic divergence wherein, although they retain the same syntactic form, the semantic meaning of one is shown to be compositional while the other is idiomatic and non-compositional.

Another significant finding distinct for Akan FL-ISVCs is that due to high levels of semantic integration, respondents are able to agree on the definition of the whole more than the individual parts due to prototypical non-compositionality of FL-ISVC structures. For example, in the noun *ǹkɔ̃́gú(ó)* 'defeat', there seemed to be a consensus on the verbs in the SVCN being *kɔ̃̀* and *gù* with a valid percentage of 93.8% of P1 respondents agreeing on the answer. Respondents also seemed to be in agreement with the meaning of *kɔ̃̀* being 'fight' with 57.1% of P1 respondents giving the meaning of *kɔ̃̀* as 'fight'.

20.　　Ǹ　　　　　　kɔ̃́　　　　　gú
　　　　+NMLZ　　　fight　　　　spill
　　　　SVCN: ǹkɔ̃́gú(ó)/ɔ̀kɔ̃́gú 'defeat'

However, there was no majority consensus for the meaning of *gú*, with respondents giving disparate answers such as 'fall', 'pour,' 'sow', 'nurse', 'nothing', 'collapse', 'spread', 'vain', 'spill', and 'fail'. The most answers were for 'pour' 'fall' and 'sow', each with just 5 P1 respondents giving these as the meanings of *gú*.

In accounting for the data, the issue at hand here is not that speakers do not know or cannot agree on a meaning for a given verb. The lack of solid consensus on meaning is due to the fact that *gú* is a complementary part of an emergent whole. While *gú*, in and of itself, has multifaceted meanings, in this instance, the meaning of *gú* is inextricably linked to the other verb in the SVC. Because *kɔ̃́* translates to 'fight', *gú*, in this particular context, simply carries the connotation that action delineated by the first verb was not carried out successfully. In other words, in cases of high semantic integration/lexicalisation, for speakers surveyed, it seems that, at times, the

individual verb is meaningless or difficult/impossible to interpret outside of the context of the other elements it collocates with. This was a pattern observed for various cases which shows clearly that semantic integration as emergence can occur to the point that the meaning of one verb in the SVC/SVCN is semantically bleached or no longer readily interpretable outside of the context of the entire unit. This observation is consistent with expectations in instantiations of emergence.

The next FL-ISVC, *ɔpamsɛn* was not attested in any of the four primary sources consulted for the study, but was found in Warren and Andrews (1990:39) documenting "Elements of Change in a Ghanaian Indigenous Knowledge System" and innovative terminology used for Akan arts and aesthetics. According to Warren and Andrews, "Ready-made clothes are termed *ɔpamsɛn* (*pam* 'to sew', *sɛn* 'to hang up') and are disparaged in comparison to tailor-made clothes which are supposed to fit better" (1990:39). In Fante, the form *otwasɛn* was reported to be used with the same meaning.[28] However, only one speaker, a Kumasi Asante Twi speaker, was able to produce *otwasɛn* and this was left without definition while 88.2% of respondents indicated that there is no SVCN derivable from *twa...sɛn*. None of the Fante speakers surveyed were able to verify *otwasɛn* as an SVCN variant of *(ɔ)pamsɛn*.

21. ɔ/ø   pam   sɛn
    +NOM   sew   hang
    SVCN: (ɔ)pamsɛn 'ready-made clothes'

When given the FL-ISVC *pam...sɛn*, the majority of P1 respondents indicated that they were not familiar with the term at a total of 30.2%. The second largest percentage of P1 respondents was from those who produced the SVCN without the prefix *ɔ* +NOM as *pamsɛn*. The third highest percentage was from those who produced the form as it appeared in Warren and Andrews (1990:39) as *ɔpamsɛn*. Amongst P2 respondents 42.1% selected *pamsɛn* without prefix as the correct form, 21.1% selected *ɔpamsɛn*, 21.1% chose *pamsɛnhɔ* while 5.3% chose *pamsensɛn* and *mpamsɛn*, respectively. All of the above were attributed the same meaning of 'ready-made clothing'.

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[28] Osam, E. Kweku. 2012. "Personal Communication." edited by O. Kambon.

When asked the meaning of *ɔpamsɛn*, 59.5% of P1 respondents responded that it translates to 'ready-made clothing'. While over half of all P1 participants, 38 out of 75 or 50.7% were abstentions, out of those who did respond, *ɔpamsɛn* seemed to be relatively familiar.

A primary conclusion with regard to FL-IVCs is that they can be used as lexicalised idioms and, as such, evaluative criteria applied to other idioms-as-emergents may be relevant to FL-ISVCs/FL-ISVCNs in Akan. Secondarily, FL-ISVCs show idiomaticity and they nominalise with a prefix as a nominalisation marker and are typically made contiguous upon nominalisation. On the other hand, PL-ISVCs, which will be discussed briefly below, are more like collocations and, in the comparatively fewer cases when they do nominalise, they do so in their own peculiar way while CCSCs are like frozen sentences that nominalise somewhat haphazardly, but which tend to retain TAMP markers upon nominalisation. However, as mentioned above, the core finding is that more than 98% of Akan FL-ISVCs identified have nominal counterparts. This is nominalisation behaviour distinct to FL-ISVCs in Akan and, thus, the first indication of the cognitive reality of SVC categorisation on the basis of emergent semantic integration and lexicalisation.

3.2 Partial Lexicalised-Integrated Serial Verb Construction Nominalisations as Resultants

The term "resultant" signifies the ultimate or aggregate outcome or effect that arises from the interaction, combination, or synthesis of various elements, factors, or actions. The most significant observation with regard to PL-ISVCs is that nominalisation for them is extremely rare—demonstrating divergent behaviour that may substantiate it as a real and valid category. Out of nearly 700 low-idiomaticity PL-ISVCs identified, less than 3% were found to have nominal counterparts. In the rare instances of nominalisation attested in sources consulted or via native speaker judgments, some of the characteristics of PL-ISVCNs are that they tend to either show compositionality, flexibility, be collocationally open or limited (as opposed to non-compositional, inflexible and collocationally closed as expected for FL-ISVCs) and/or be less familiar than more prototypical FL-ISVCs. Some of these PL-ISVCs are referred to in the literature as the literal 'counterfeit form' counterparts of FL-ISVCs/FL-ISVCNs as discussed by Barkema (1996) in relation to other types of

idioms. I refer to these as semantic resultants. Such an example is *hwíégú(ó)* 'pouring away' the PL-ISVCN and, after nominalisation, when used with *mógyá* (*ɛ.n., mógyá…hwíégúó*), *hwíégu(o)* can carry the meaning of 'sacrifice of one's life blood for a cause' the FL-ISVCN which have disparate uses: one literal and one idiomatic.

22.　ø　　　　　hwìé　　　　gú
　　　+NMLZ　　　pour　　　　spill
　　　SVCN: hwìégu(o) 'pouring away'

The PL-ISVC and the FL-ISVC versions are argued to be separate and distinct forms. In the PL-ISVC form it simply means 'pouring out' as defined in all three major sources consulted. Boadi (2005) even gives a collocationally limited alternative of *sɔ̀nè…gú* with V1 replaced by a synonym—*hwìè*—wherein he defines *hwíégú(o)* as the following:

23.　(nnèyɛ́ɛ́) sɛ̂　wɔ̀-sɔ̀né　　　　ànáá wɔ̀-hwíé　　　gú
　　　(action) COND 3PL.SBJ-trickle　　DISJ 3PL.SBJ-pour spill
　　　fáḿ
　　　ground
　　　'(action) when [something is] trickled or poured out on the ground'
　　　(Boadi 2005: 319).

However, when *mogya* is introduced, it becomes an idiomatic FL-ISVCN, in which Boadi gives an extended definition:

24.　mógyá　　　　hwíégúó (=nìpàkúḿ)
　　　blood　　　　pouring (=nìpákúḿ)
　　　'bloodshed (=killing of persons)'
　　　(Boadi 2005: 319)

This is again, reason why the term SVCN should be used rather than simply SVN as the construction part of the term allows for capturing the effect of *mogya* 'blood' on the lack of compositionality of the resulting nominal. In essence, we see that when *hwíégú(o)* is used in a different context, it is no longer literal and fully compositional, but rather an idiom for the killing/death of persons. Thus, here we

make the case for two separate instances of *hwìè...gú*: one an idiom and one a non-idiom (simple resultant). Another example of *hwìè...gú* as an FL-ISVC may be found in a patriotic song about Ghana: *Yɛn Ara Asase Ni* 'This is our land'. Two lines of the song appear below:

25.   Mógyá nà   nànánɔ́ḿ   hwíé   gú-í
       blood FOC   ancestors   pour   spill-COMPL
       nyá   dé   tó-ò   hɔ́   má yɛ̀ǹ.
       obtain take put-COMPL   DEM give 3PL.OBJ
       'Blood that our ancestors shed to acquire it (land) and preserve it for us.'

In (24) *hwìè...gú* is the idiomatic version of the SVC (*ɛ.n.* an FL-ISVC). In (25), it is not seen as literal that ancestors poured their blood out in the way one pours water out of a jar for the purpose of acquiring land. It is rather an idiomatic usage here to mean that the forefathers of Ghanaians died to liberate Ghana. Thus, we are arguing that *hwíégú(o)* (non-idiomatic, literal 'pouring out') the resultant PL-ISVCN and *(mógyá) hwíégú(o)* (idiomatic) the emergent FL-ISVCN have disparate uses and co-exist in complementary distribution wherein one is literal/compositional and one is idiomatic/non-compositional.

Another linguistically significant generalisation is that sequential ordering of PL-ISVCs and their nominal counterparts are iconic in keeping with the actual temporal order of events in the real world.
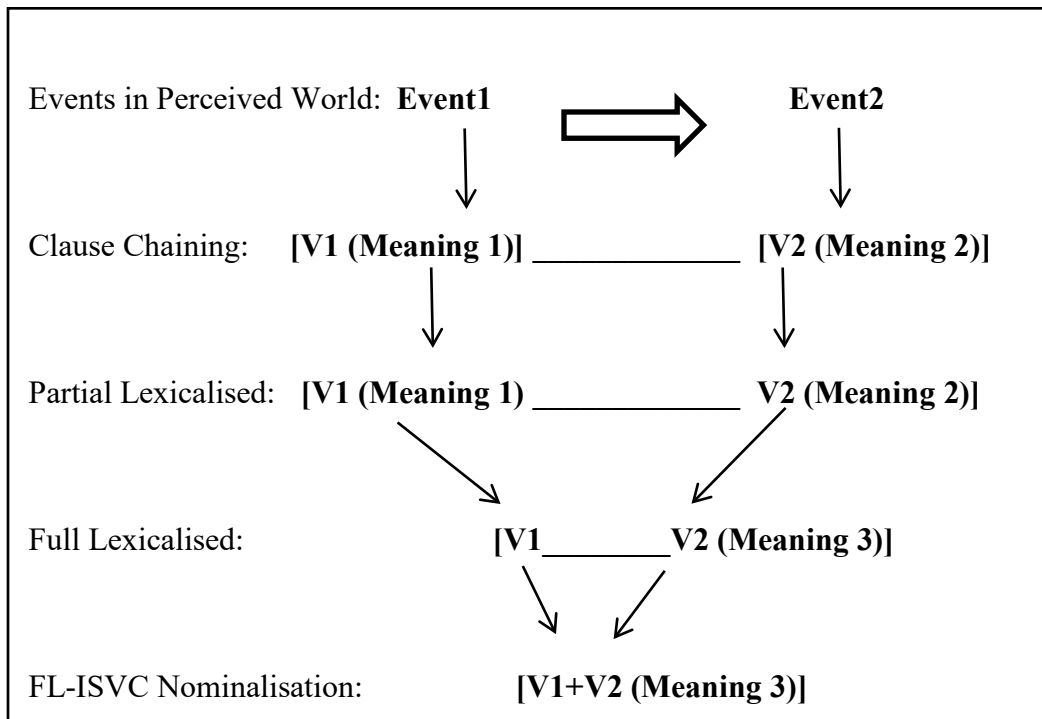
```
Events in Perceived World:  Event1  ⟹  Event2
                               │                    │
                               ▼                    ▼
Clause Chaining:   [V1 (Meaning 1)] _____ [V2 (Meaning 2)]
                               │                    │
                               ▼                    ▼
Partial Lexicalised:  [V1 (Meaning 1) _____ V2 (Meaning 2)]
                                    ↘           ↙
Full Lexicalised:              [V1_____V2 (Meaning 3)]
                                    ↘     ↙
FL-ISVC Nominalisation:        [V1+V2 (Meaning 3)]
```

Figure 6: Iconicity from perceived world to nominalisation

The PL-ISVCN *akyetɔn* derived from PL-ISVC *kye...tɔn* 'to catch and sell' and exemplifies temporal iconicity expected this category. As resultants, both verbs retain their meaning both in the SVC structure and in the nominalized structure. In relation to flexibility unlike emergent FL-ISVCNs, components of the resultant PL-ISVCN like *kye* can be duplicated as *kyekye* and *tɔn* can be duplicated as *tontɔn* without any significant change in meaning of V1, V2 or the composite structure of the PL-ISVC/PL-ISVCN. When it comes to collocability, *kye* can be replaced by *kyere* as expected in a PL-ISVC which is less rigid and more collocationally open than prototypical instances of FL-ISVCNs discussed above.

26. a   kye   tɔn
     +NOM   catch   sell
     SVN: akyetɔn 'catching and selling'

Example (26) above is an example of this iconicity in PL-ISVCs. In other words, if in the real world something must be caught before that thing can be sold, then this reality will be reflected in the sequential order of verbs in the language in question. This fact of reality is carried over to the word order of the ISVC and, therefore, the SVCN, which is why it cannot be *atɔnkye whereby one sells the thing before that very thing has been captured. Thus, iconicity in the form of temporal sequencing order, or faithfulness to the actual order of events in the real world, is the primary factor in the morphosyntactic ordering of verbal elements in Akan PL-ISVC nominalisation.

It is worth noting that this type of temporal sequencing cannot be argued as existing in the case of FL-ISVCs due to the fact that the two erstwhile events have undergone semantic integration to the point of being regarded within the language as a single event. Thus, there can be no temporal sequencing order of distinct events since there is but one single unitary event rather than two. It is significant to note, however, that because the pre-existing base template form or schema for constructing FL-ISVCs is based upon how verbs are ordered as observed in earlier stages of lexicalisation, FL-ISVCs overwhelmingly follow an 'iconicity-like' pattern whereby one verb always precedes the other in terms of linear ordering in the SVC. This ordering is then carried over to the SVCN.

PL-ISVCNs also may have TAMP and/or nominalisation markers within the SVCNs (Kambon, Duah and Appah 2018). When there are two markers of nominalisation in the same SVCN, typically they have the same phonological form. An example of this is the initial and intervening nasal at the same place of articulation for SVC *fua* 'grab hold' *hwé* 'beat up' when nominalised as *m̀fùà(ǹ)hwé(ɛ́)* 'grabbing and beating up' (also exemplifying iconic temporal sequence). In *m̀fùà(ǹ)hwé(ɛ́)*, and other such examples, the 'infix' is attributed to insertion based on particular phonological conditions of nasalisation.

The core finding with regard to PL-ISVC nominalisation is that less than 3% of all Akan PL-ISVCs identified can be nominalised. This is a major finding to support our categorisation of Akan SVCs based on degree of lexicalisation in light of behaviour distinct from that of FL-ISVC nominalisation.

3.3 Clause Chaining Serial Construction Nominalisations

Clause Chaining Serial Constructions (CCSCs) can nominalise in Akan in a type of 'frozen sentential nominalisation.' As such, CCSCs are closer to the finite end of the non-finite – finite continuum, retaining aspects of Tense, Aspect, Mood and Polarity (TAMP) when nominalised. Traditional nominalisation markers such as *a-* +NMLZ, *ɔ-* +NMLZ and *n-* +NMLZ are in complementary distribution with TAMP when formally retained in CCSN. In other words, erstwhile TAMP markers displace the NMLZ markers as the two do not co-occur in the same morphosyntactic position.

This may be due to what we posit may be a continuum as argued for by Vendler (1967:131) wherein some SVCNs retain more verb-like features while others are more prototypically nominal with such features stripped away. According to Vendler (1967) there are imperfect nominals and perfect nominals, "one in which the verb is still alive as a verb, and the other in which the verb is dead as a verb, having become a noun" (Vendler 1967:131). Also, following Koptjevskaja-Tamm (1993), we find that "In the former category, nominalisations may contain tenses, auxiliaries and adverbs, while nominalisations of the latter category may not contain such verbal satellites, but rather take articles, prenominal adjectives and so on." (Koptjevskaja-Tamm 1993:18). An example of retention of TAMP in CCSNs can be observed in the case of *ǹténsèré.*

27. Ǹ-té m'àmánèhúnú nyìnáá ǹ-sèré mé
    NEG-hear 1SG.POSS'troubles all NEG-laugh
    1SG.OBJ
    'Don't listen to my problems and laugh'
    SVCN: Ǹténsèré 'don't listen and (don't) laugh' (Kambon, Duah and Appah 2018: 402)

28. ǹténsèré
    Ǹ- té Ǹ- sèré
    NEG hear NEG laugh
    'don't hear [my story] and laugh'

Here, we see very clearly that the negative polarity that occurs in the finite construction occurs in the nominal as well. The same ordering and polarity occur prior to and after nominalisation.

Another example can be seen below in (47):

29. Ɔ̀-à-m̀-má   m-à-ǹ-yɛ́
    3SG.SBJ-COMPL-NEG-allow   1SG.SBJ-COMPL-NEG-do

    m'àdwúmá 1SG.POSS'work
    'He/she did not allow me to do my work'
    SVCN: àm̀mámàǹyɛ́ 'impediment'

30. pɛ̀   wó   á   yɛ̀   dɛ́ń
    look for   you   CONS   do   what
    'why should (I) look for you?'
    SVCN: Pɛ̀wóáyɛ̀dɛ́ń? 'Search-for-you-to-use-you-to-do-what?'   (Obeng 2001: 100)

In the above examples we find that the completive aspect occurs in the finite construction which is, again, retained with the same linear ordering and semantics post-nominalisation. Examples such as these show that TAMP markers are retained in CCSC nominalisation. Thus, it appears that a gradient approach as is consistent with Prototype Theory is appropriate for Akan SVC nominalisation in that some nominals are more noun-like than others (Lexicalised-Integrated Serial Verb Constructions) while others are more verb-like (Chaining Serial Constructions).

CCSCs nominalise somewhat haphazardly in the sense that some sentences, expressions and proverbs may make their way to become CCSCNs, others may not. Such sentences or expressions may happen to have Clause Chaining Serial Constructions in them. What we observe in CCSCNs is rather an arbitrary sentence, proverb, phrase or expression which happens to contain a Clause Chaining Serial Construction that is instantaneously 'frozen' or transformed into a nominal referent for any given person, place or thing in the real world 'on-the-fly.' Consistently, the majority of respondents indicated that they are not sure of CCSCNs that could be derived from verbal elements of CCSCs provided while others stated outright that there are none.

Relevant to our overall discussion of emergence, if something is not emergent (like FL-ISVCNs) or resultant (like PL-ISVCNs), then what could it possibly be? Here, discussions from our physics-based analogy may be instructive. If something is not considered emergent or resultant, it can be categorized as either fundamental, elementary, or basic. These terms imply that the thing in question is a foundational component or a fundamental aspect that does not arise as a result of a combination or emergence from other elements.

In sum, SVC semantic integration, therefore, seems to effectively provide something of a 'roadmap' to what the SVCN form will be. Further, in the case of CCSCs there is no idiomaticity in place in the sense of the four idiomaticity factors seen in the case of FL-ISVCs. When there is less semantic integration, there tends to be correspondingly less familiarity with the SVC form and, therefore, respondents are less able to ascertain the correct SVCN form when provided with components (Kambon 2012).

Distinct CCSC behaviour with regard to haphazard nominalisation forms the third piece of independent language-internal linguistic evidence showing the cognitive reality of the categorisation of SVCs in Akan on the basis of degrees of lexicalisation. Thus, while statistically significant and replicable findings can be ascertained in the cases of FL-ISVC and PL-ISVC nominalisation, because literally any and every sentence that happens to contain a CCSC could potentially be nominalised on-the-fly, such percentages are not available for CCSC nominalisation.

4. Conclusions

The objective of this chapter was to draw a conceptual and theoretical link between semantic integration in Akan Serial Verb Construction Nominalization and the concept of emergence as articulated in various disciplines. I argued that the degree to which semantic integration as an exemplification of emergence in language pertains at the serial verb construction level correlates to nominalisability (or lack thereof) for that class of serial verb construction. Consequently, in the case of Akan SVCNs, three categories of SVCs were analysed on the basis of how they are nominalised, the degree to which nominalisation occurs and whether nominalisation can occur at all. Various sources were consulted in three major literary dialects of Akan: Asante Twi, Fante and Akuapem Twi. Further, native speakers of each of these dialects

were consulted to ascertain the veracity of various attested serial verb construction nominals (SVCNs) in Akan.

The results of this study point to a clear relationship between degrees of semantic integration, lexicalisation and nominalisability. Indeed, when the independent variable in the form of the lexicalisation of an SVC is changed, the result is clear in that native speakers tend to be largely either able to nominalise or not able to nominalise on that basis alone. Thus, lexicalisation itself is an emergent property. With regard to semantics, the more semantically integrated the components of the SVC are, the less semantically compositional the SVC is. Thus, the whole is different from and greater than the individual components taken alone. This reality is one of the hallmarks of emergence as a concept. Thus, the conclusion can safely be drawn that semantic integration is to linguistics what emergence is to other disciplines. As semantically integrated SVCs are idiomatic, it holds that idioms in other languages that may or may not have SVCs will also display degrees of semantic emergence. In example (15), for example FL-ISVCN *odima* 'intercession' is distinct from the components *di* 'eat' and *ma* 'give'. It is not resultant in the sense of literally eating and giving something to someone. The meaning of the whole is emergent. In example (26), however, in the case of PL-ISVCN *akyetɔn* 'catching and selling' the meaning is wholly compositional and even iconic with regard to temporal sequencing phenomena as expected. This would be the equivalent of a resultant. However, in reflection upon the fact that nominalisation is not 100% for FL-ISVCs, it leaves the door open that there are FL-ISVCs that are more prototypical and others that are less so. Similarly, because PL-ISVC nominalisation is not 0%, it follows that there are also prototype effects with regard to the behaviour of resultants. In other words, there can be said to be fuzzy boundaries that account for categorial outliers.

As such, using Prototype Theory, we are not only able to account for the bulk of the data in this regard, but we are also able to come to terms with the statistically insignificant cases of divergence at the fuzzy boundaries of the category in question. It was found that, as expected, those more prototypical Full Lexicalised-Integrated Serial Verb Constructions would be more readily made into nominals versus those which are located at the fuzzy boundaries or are, in other words, less prototypical. On the other hand, those serial verb constructions that exhibit less lexicalisation

would prototypically not be expected to be made into nouns. This relationship seemed to play out in terms of comparatively fewer respondents from P1 and P2 able to create an SVCN form from either PL-ISVCs or CSCs as opposed to the vast majority who were able to do so in the case of FL-ISVCs. As such, our expectations were borne out in the results of the study and, further, show a validation of the cognitive basis of a typology of SVCs in Akan on the basis of lexicalisation in that this method of categorisation serves to tell us what native speakers know about their language. Additionally, prototype theory allowed us to capture otherwise anomalous cases which diverged from the prototypical pattern.

This chapter substantially builds upon the literature on SVCs in general and Akan SVCs in particular. A fundamental contribution is the detailed discussion, exemplification and analysis pertinent to the nominalisation of SVCs. This study, as such, constitutes a detailed analysis of nominalisation behaviour for the serializing language in question: Akan. Further, the categorisation of SVCs on the basis of lexicalisation is vindicated by means of independent language-internal evidence from the three major literary Akan dialects. Conclusions drawn in the chapter are based on fieldwork and copious data collected and on painstaking synthesis and analysis of this data not only imparting them with functional validity but also ensuring their ability to stand the test of time under academic scrutiny.

Therefore, this chapter significantly contributes to a discussion of emergence in the context of semantics in general and in the context of serial verb construction nominalisation specifically. It effectively serves as a blueprint for extended tests (such as nominalisation, morphosemantic decomposition of nominals, relativisation, reflexivisation, etc.) as a means of substantiating the categorisation of SVCs in general and on the basis of lexicalisation in Akan in particular. As such, a future area of research will be in more fully addressing analysability of nominalisations (or lack thereof) in terms of decomposition of nominals in Akan and other West African languages, such as Yorùbá (Kambon Forthcoming). This future research, too, has implications for more theoretical discussions of emergence as it may demonstrate the degree to which, in the context of language, emergents may be reliably traced back to their constituent elements.

Abbreviations

1	First person
2	Second person
3	Third person
BEN	Benefactive
COMPL	Completive aspect
COND	Conditional marker
CONJ	Conjunction
CONS	Consecutive marker
DEF	Definite marker
DEM	Demonstrative marker
DISJ	Disjunction
DUP	Duplication
FOC	Focus marker
FUT	Future marker
INAN	Inanimate
NEG	Negation
NMLZ	Nominalization
OBJ	Object
PL	Plural
POSS	Possessive
PRF	Perfect
SBJ	Subject
SG	Singular
SVCN	Serial verb construction nominalisation

References

Adomako, Kwasi. 2013. "Verbal Nominalization as a Derivational Process: The Case of Akan." *Ghana Journal of Linguistics* 1(2): 43-64.

Agyeman, Nana Ama. 2002. *Serial Verb Constructions in Akan*. Masters Thesis, Linguistics, Norwegian University of Science and Technology (NTNU), Trondheim.

Aikhenvald, Alexandra Y. 2006. "Serial Verb Constructions in a Typological Perspective." In *Serial Verb Constructions: A Cross-Linguistic Typology*, edited by Alexandra Y. Aikhenvald and R. M. W. Dixon, 1-87. New York: Oxford University Press.

Aikhenvald, Alexandra Y. and Robert M. W. Dixon. 2006. *Serial Verb Constructions: A Cross-Linguistic Typology*. Oxford: Oxford University Press.

Akrofi, Clement A. 1938. *Twi Nsɛm Nkorɛnkorɛ Kyerɛwbea*. Accra: Government Printing House.

Appah, Clement Kwamina Insaidoo. 2005. "Action Nominalization in Akan." Paper presented at the *Annual Colloquium of the Legon-Trondheim Linguistics Project*, 18-20 January 2005.

Appah, Clement Kwamina Insaidoo. 2009. "The Representation of ISVC in C and F Structures of LFG: A Proposal." *SKASE Journal of Theoretical Linguistics* 6(1): 92–117.

Bader, Markus. 1994. "Syntactic-Function Ambiguities." *Folia Linguistica* 28(1-2): 5-66. doi: 10.1515/flin.1994.28.1-2.5.

Baker, Mark. 1989. "Object Sharing and Projection in Serial Verb Constructions." *Linguistic Inquiry* 20: 513-53.

Bannerman, J. Yedu, D. E. K. Krampah, G. F. Kojo Arthur and Kwesi A. Dickson. 2011. *Mfantse Nkasafua Na Kasambirenyi Nkyerɛase: Dictionary of Mfantse Words and Idioms*, Vol. 1-2. Tema: Center for Indigenous Knowledge Systems.

Barkema, Henk. 1996. "Idiomaticity and Terminology: A Multi-Dimensional Descriptive Model." *Studia Linguistica* 50(2): 125-60.

Boadi, Asɛm Kwasi. 2005. *Twi Kasa Mmara Ne Kasɛsoɔ*. Kumasi: Katawuri.

Britannica, Editors of Encyclopaedia. 2023. "Emergence" *Encyclopaedia Britannica,* Web: britannica.com. Retrieved May 12, 2023, 2023 (https://www.britannica.com/science/emergence-science).

Budge, Ernest Alfred Wallis. 1904. *The Gods of the Egyptians: Or, Studies in Egyptian Mythology*, Vol. 1: Methuen & Company.

Chibbaro, Sergio, Lamberto Rondoni and Angelo Vulpiani. 2014. *Reductionism, Emergence and Levels of Reality*. Cham, Switzerland: Springer.

Christaller, Johann G. 1933. *A Dictionary of the Asante and Fante Language Called Tshi (Twi)*. Basel: Basel Evangelical Missionary Society.

Cohen, S. Marc and C. D. C. Reeve, "Aristotle's Metaphysics", *The Stanford Encyclopedia of Philosophy* (Winter 2021 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/win2021/entries/aristotle-metaphysics/>.

Crowley, Terry. 1987. "Serial Verbs in Paamese." *Studies in Language* 11(1): 35-84.

Desch-Obi, T. J. 2008. *Fighting for Honor: The History of African Martial Art Traditions in the Atlantic World*. Columbia, SC: University of South Carolina Press.

Dryer, Matthew S. and Martin Haspelmath. 2012, "Akan" *The World Atlas of Language Structures Online.*, Munich: Max Planck Digital Library. Retrieved 25 January, 2012, (http://wals.info/languoid/lect/wals_code_akn).

Durie, Mark. 1997. "Grammatical Structures in Verb Serialization." In *Complex Predicates*, edited by Alex Alsina, Joan Bresnan and Peter Sells, 289-354. Stanford: CSLI Publications.

Faulkner, Raymond Oliver. 1933. *The Papyrus Bremner-Rhind,(British Museum No. 10188)*, Vol. 3: Édition de la Fondation égyptologique reine Élisabeth.

Foley, William and M Olson. 1985. "Clausehood and Verb Serialization." In *Grammar Inside and Outside the Clause*, edited by Johanna Nichols and Anthony C. Woodbury, 17-60. Cambridge: Cambridge University Press.

Gibb, Sophie, Robin Findlay Hendry and Tom Lancaster. 2019. *The Routledge Handbook of Emergence*. London: Routledge.

Hellan, Lars, Dorothee Beermann and Eli Saethero Andenes. 2003. "Towards a Typology of Serial Verb Constructions in Akan." Paper presented at the *Trondheim Summer School 03, Trondheim (http://edvarda.hf.ntnu.no/ling/tross/TROSS03-toc.html)*.

Hiraiwa, Ken and Adams Bodomo. 2008a. "Object-Sharing as Symmetric Sharing: Predicate Clefting and Serial Verbs in Dagaare." *Natural Language & Linguistic Theory* 26(4): 795-832. doi: 10.1007/s11049-008-9056-y.

Hiraiwa, Ken and Adams Bodomo. 2008b. "Object-Sharing as Symmetric Sharing: Evidence from Dagaare." In *Proceedings of the 26th West Coast Conference*

on Formal Linguistics, edited by C. B. Chang and H. J. Haynie, 243-251. Somerville, MA: Cascadilla Proceedings Project.

James, G.G.M. 2013. *Stolen Legacy*. Summit, NJ: Start Publishing LLC.

Jansen, Bert, Hilda Koopman and Pieter Muysken. 1978. "Serial Verbs in Creole Languages." *Amsterdam Creole Studies* 2: 125-159.

Kambon, Ọbadele. 2018. "Afrikan Combat Forms Hidden in Plain Sight: Engolo/Capoeira, Knocking-and-Kicking and Asafo Flag Dancing ". *Africology: The Journal of Pan African Studies* 11(10):327-63.

Kambon, Obadele. 2012. *Serial Verb Nominalization in Akan*. PhD thesis, Department of Linguistics, University of Ghana, Legon.

Kambon, Obadele, E. Kweku Osam and Nana Aba Amfo. 2015. "A Case for Revisiting Definitions of Serial Verb Constructions – Evidence from Akan Serial Verb Nominalization." *Studies in African Linguistics* 44(2): 75-99.

Kambon, Obadele, Reginald Duah and Clement Appah. 2018. "Serial Verb Nominalization in Akan: The Question of Intervening Elements." In *Theory and Description in African Linguistics: Selected Papers from ACAL 47* edited by E. Clem, P. Jenks and H. Sande, 395-422. Berlin: Language Sciences Press.

Kambon, Obadele. Forthcoming. "Lexicalization and Issues of Semantic Analysis in Serial Verb Construction Nominalization."

Koptjevskaja-Tamm, Maria. 1993. *Nominalizations*. Oxford; New York: Routledge.

Lakoff, George. 1987. *Women, Fire and Dangerous Things*. Chicago: University of Chicago Press.

Lewes, George Henry. 1875. *The Principles of Certitude. From the Known to the Unknown. Matter and Force. Force and Cause. The Absolute in the Correlations of Feeling and Motion. Appendix: Imaginary Geometry and the Truth of Axioms. Lagrange and Hegel: The Speculative Method. Action at a Distance* Vol. 2. London: Trübner & Company.

Li, Charles N. and Sandra A Thompson. 1973. "Serial Verb Constructions in Mandarin Chinese: Subordination or Coordination." In *You Take the High Node and I'll Take the Low Node.*, edited by C. Corum, C. Smith-Stark and A. Weiser, 96-103. Chicago: Chicago Linguistic Society.

Lin, Yi. 1995. "Developing a Theoretical Foundation for the Laws of Conservation." *Kybernetes* 24(5): 41-49.

Merriam-Webster. 2022. "Lexicalization." In *Merriam-Webster Dictionary*. Web: Merriam-Webster.com.

Montgomery, Akinjide Bonotchi. 2007. *All the Transformations of Ra*. Detroit: The Medew Netcher Study Group of Detroit.

Obeng Gyasi, S. 1981. *Nouns and Nominalization in Akan with Special Reference to the Twi Dialects*. BA Long Essay. University of Ghana.

Obeng, Samuel Gyasi. 2001. *African Anthroponymy: An Ethnopragmatic and Morphophonological Study of Personal Names in Akan and Some African Societies*. München: Lincom Europa.

Obenga, T. 2002. *Kmt Language through Primary Texts: Original Data – Precise Examination – Comments*. San Francisco: Pillar Edition.

Obenga, Theophile. 2004. *African Philosophy: The Pharaonic Period, 2780-330 B.C.* Popenguine, Senegal: Per Ankh.

Osam, E. Kweku. 1993. "The Loss of the Noun Class System in Akan." *Acta Linguistica Hafniensia* 26: 81-106.

Osam, E. Kweku. 1994. *Aspects of Akan Grammar: A Functional Perspective*. Ph.D. Thesis, Linguistics, University of Oregon, Eugene.

Osam, E. Kweku. 2004. *The Trondheim Lectures--An Introduction to the Structure of Akan: Its Verbal and Multiverbal Systems*. Department of Linguistics: Legon.

Osam, E. Kweku. 2012. "Personal Communication." edited by O. Kambon.

Patton, Michael Quinn. 2002. *Qualitative Research and Evaluation Methods*, Vol. 3rd Edition. Thousand Oaks, CA: Sage Publications.

Rosch, Eleanor and Caroline Mervis. 1975. "Family Resemblances: Studies in the Internal Structure of Categories." *Cognitive Psychology* 7: 573-605.

Rosch, Eleanor. 1978. "Principles of Categorization " In *Cognition and Categorization*, edited by Eleanor Rosch and Barbara L. Lloyd, 27-48. Hillsdale, NJ: Erlbaum.

Rosch, Eleanor. 1983. "Prototype Classification and Logical Classification: The Two Systems." In *New Trends in Conceptual Representation: Challenges to Piaget's Theory?*, edited by Ellin Kofsky Scholnick, 73-86. Hillsdale, NJ: Erlbaum.

Stoeckler, Manfred. 1991. "A Short History of Emergence and Reductionism." In *The Problem of Reductionism in Science: Colloquium of the Swiss Society of Logic and Philosophy of Science, Zürich, May 18–19, 1990* edited by Evandro Agazzi, 71-90. Dordretch: Springer.

Taylor, John R. 2003. *Linguistic Categorization*. Oxford: Oxford University Press.

Vendler, Zeno. 1967. *Linguistics in Philosophy*. Ithaca, NY: Cornell University Press.

Warren, Dennis M. and J. Kweku Andrews. 1990. "The Dynamics of Persistence and Change in Akan Aesthetics." In *Akan Arts and Aesthetics: Elements of Change in a Ghanaian Indigenous Knowledge System*, edited by Dennis M. Warren, 31-42. Ames, Iowa: Iowa State University Research Foundation.

Wheelwright, Philip. 1958. "The Intellectual Light." *The Sewanee Review* 66(3): 397-412.