

**QO‘QON DAVLAT UNIVERSITETI HUZURIDAGI ILMIY DARAJA BERUVCHI  
PhD.03/04.06.2021.Fil.132.01 RAQAMLI ILMIY KENGASH**

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**ANDIJON DAVLAT UNIVERSITETI**

**ZARMASOV SHAHBOZ SHAHRIDDIN O‘G‘LI**

**O‘ZBEK TILI SO‘Z TURKUMLARINI MODELLASHTIRISH TAMOYILLARI  
(Ot so‘z turkumi misolida)**

**10.00.11 – Til nazariyasi. Amaliy va kompyuter lingvistikasi**

**FILOLOGIYA fanlari bo‘yicha falsafa doktori (PhD) dissertatsiyasi  
AVTOREFERATI**

**Qo‘qon – 2025**

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**Оглавление автореферата диссертации доктора философии (PhD) по  
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AVTOREFERATI**

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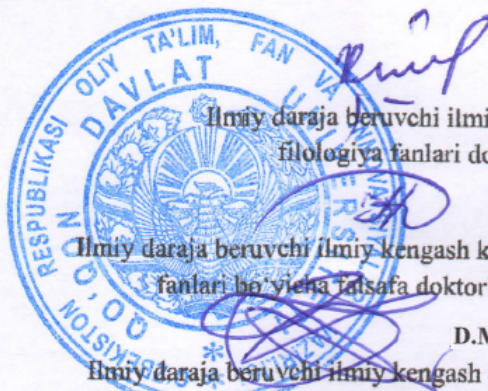
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## KIRISH (falsafa doktori (PhD) dissertatsiyasi annotatsiyasi)

**Dissertatsiya mavzusining dolzarbligi va zarurati.** Jahon tilshunosligida olam uzvlarini modellashtirish, til hodisalarining strukturasi va grammatik kategoriyalarining milliy modellarini yaratish masalalariga alohida e'tibor qaratildi. Til tadqiqiga zamonaviy yondashuvlar asosida sohaga oid yangi nazariyalar yuzaga keldi. Natijada XX asrning ikkinchi yarmida formallashtirish, XX asrning oxiri XXI asrning dastlabki yillaridan boshlab lingvistik modellashtirish tilshunoslikdagi sistem tadqiqotlar uchun metodologik asos bo'lib xizmat qila boshladi. Bu esa tilshunoslikning pragmalingvistika, sotsiolingvistika, lingvomadaniyatshunoslik, nomshunoslik, kognitologiya va kompyuter lingvistikasi kabi sohalari rivojini ta'minlab, lingvistik modellashtirish nazariyasining sifat bosqichiga ko'tarilishida amaliy ahamiyat kasb etdi.

Dunyo tilshunosligida olamni ilmiy bilish, inson va mashina muloqotini optimallashtirish, dasturiy materiallar uchun lingvistik ta'minot yaratish asosiy masalaga aylandi. Bu esa til birliklari va ularni tahlil etishda tafakkur eksperimentidan foydalanish hamda modelni ideal obyekt sifatida talqin etish zaruratini belgiladi. Tilni modellashtirishda kompyuter lingvistikasi sohasida bir qator ilmiy va amaliy natijalar qo'lga kiritildi: milliy til korpuslari, matnlarning morfologik, sintaktik va semantik tahlilini ta'minlovchi dasturlar yaratildi, NLP (tabiiy tilni qayta ishlash) tizimi<sup>1</sup> ishlab chiqildi.

O'zbek tilshunosligida ham tilni zamonaviy kommunikatsion qurilmalar bilan integratsiyalashuvi muammolarini hal etishga yo'naltirilgan kompyuter dasturlari, matnni avtomatik tahlil qiluvchi morfoanalizatorlar yaratildi, tabiiy tilni qayta ishlash va uning lingvistik bazalarini yaratish borasida salmoqli ishlar qilindi. "Davlat tilining zamonaviy axborot texnologiyalari va kommunikatsiyalaridagi o'rnini kuchaytirish, faol integratsiyalashuvini ta'minlash"<sup>2</sup> hamda til korpusining lingvistik ta'minotini yaratish, modellashtirishga oid umumiy tamoyillarni o'rganish va lingvistik modellar ishlab chiqish masalalariga e'tibor kuchaydi. Biroq modellashtirishning lingvistik asoslarini ishlab chiqish, o'zbek tilining milliy korpusi uchun milliy modellar asosida lingvistik ta'minot yaratish va o'zbek tilining so'z turkumlarini modellashtirish tamoyillarini belgilash bugungi kunning dolzarb ilmiy vazifalaridan biridir.

O'zbekiston Respublikasi Prezidentining 2019-yil 21-oktabrdagi PF-5850-sonli "O'zbek tilining davlat tili sifatidagi nufuzi va mavqeyini tubdan oshirish chora-tadbirlari to'g'risida", 2020-yil 20-oktabrdagi PF-6084-sonli "Mamlakatimizda o'zbek tilini yanada rivojlantirish va til siyosatini takomillashtirish chora-tadbirlari to'g'risida", 2020-yil 29-oktabrdagi PF-6097-sonli "Ilm-fanni 2030-yilgacha rivojlantirish konsepsiyasini tasdiqlash

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<sup>1</sup> Jurafsky D., Martin J.H. Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition with Language Models, 3rd edition. Online manuscript released August 24, 2025. <https://web.stanford.edu/~jurafsky/slp3>.

<sup>2</sup> Ўзбекистон Республикаси Президенти Шавкат Мирзиёевнинг 2020 йил 20 октябрдаги «Мамлакатимизда ўзбек тилини янада ривожлантириш ва тил сиёсатини такомиллаштириш чора-тадбирлари тўғрисида»ги ПФ-6084-сон фармони, // <https://lex.uz/docs/5058351>.

to'g'risida", 2021-yil 1-apreldagi PF-6198-sonli "Ilmiy va innovatsion faoliyatni rivojlantirish bo'yicha davlat boshqaruv tizimini takomillashtirish to'g'risida", 2020-yil 6-noyabrdagi PF-6108-sonli "O'zbekistonning yangi taraqqiyot davrida ta'lim-tarbiya va ilm-fan sohalarini rivojlantirish chora-tadbirlari to'g'risida", 2022-yil 28-yanvardagi PF-60-sonli "2022-2026-yillarga mo'ljallangan yangi O'zbekistonning taraqqiyot strategiyasi to'g'risida"gi farmonlari hamda Vazirlar Mahkamasining 2020-yil 11-martdagi 139-sonli "O'zbek tili va adabiyoti bo'yicha fundamental va amaliy tadqiqotlar samaradorligini yanada oshirish chora-tadbirlari to'g'risida"gi qarori va boshqa tegishli me'yoriy-huquqiy hujjatlarda belgilangan vazifalar ijrosini ta'minlashda ushbu dissertatsiya muayyan darajada xizmat qiladi.

**Tadqiqotning respublikada fan va texnologiyalar rivojlanishining ustuvor yo'nalishlariga mosligi.** Mazkur tadqiqot respublikada fan va texnologiyalar rivojlanishining I. "Axborotlashgan jamiyat va demokratik davlatni ijtimoiy, huquqiy, iqtisodiy, madaniy, ma'naviy-ma'rifiy rivojlantirish, innovatsion iqtisodiyotni rivojlantirish" ustuvor yo'nalishi doirasida bajarilgan.

**Muammoning o'rganilganlik darajasi.** Dunyo tilshunosligida lingvistik ta'minotning nazariy-metodologik muammolarini o'rganish XX asrning 60-yillarida boshlangan bo'lib, shu davrda "mexanik" bosqichdan "mantiqiy-lingvistik" bosqichga o'tildi<sup>3</sup>. Morfologik tahlilning nazariy asoslari S.Toldova, T.Sadikov<sup>4</sup>, morfoanaliz xususiyatlari D.Rudolf<sup>5</sup>, morfoanalizning amaliy ahamiyati A.Ermakov<sup>6</sup>, matnga morfologik va sintaktik ishlov berish modeli I.Nojov<sup>7</sup> tomonidan o'rganilgan. Turkiy kompyuter lingvistikasida morfoanalizator tuzish masalalari G.Eryigit, E.Adali, A.Dibo, A.Sheymovich, J.Suleymanov, R.A.Gulmullin, R.R.Gataullin<sup>8</sup> kabi olimlarning ishida yoritildi.

Jahon tilshunosligida lingvistik modellashtirish sintaktik sathda maydonga keldi. XX asrda E.Sepir, L.Blumfeld, R.Yakobson, N.Xomskiy, A.Losev, Z.Xarris, Ch.Hokket, S.Markus<sup>9</sup> kabi olimlar tomonidan "lingvistik model" tushunchasi ilk

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<sup>3</sup> Соколов А.В. Автоматизация библиографического поиска / А.В.Соколов. – М.: Книга, 1981. – 167 с.

<sup>4</sup> Толдова С.Ю., Бонч-Осмоловская А.А. Автоматический морфологический анализ // Фонд знаний «Ломоносов». – М., 2011. [www.lomonosov-fund.ru/enc/ru/encyclopedia:0127430](http://www.lomonosov-fund.ru/enc/ru/encyclopedia:0127430); Садыков Т., Кочконбаева Б. Об оптимизации алгоритма морфологического анализа // Шестая Международная конференция по компьютерной обработке тюркских языков «Turklang-2018». (Труды конференции) – Ташкент, 2018. – 320 с.

<sup>5</sup> Rodolfe D. Computational Linguistic Text Processing: Lexicon, Grammar, Parsing and Anaphora Resolution. Nova Science Publishers, Inc. – New York, 2008. – P. 4–5.

<sup>6</sup> Ермаков А. Морфологический анализатор – основа поисковых систем // <https://www.kv.by/archive/index2004154301.htm>

<sup>7</sup> Ножов И.М. Морфологическая и синтаксическая обработка текста (модели и программы) сегментации русского предложения. – М.: АКД, 2003. – 152 с.

<sup>8</sup> Eryigit G., Adali E. An affix stripping morphological analyzer for Turkish // Proceedings of IASTED International Conference ARTIFICIAL INTELLIGENCE AND APPLICATIONS. February 16–18, 2004, – Austria. – P. 299–304.; Дыбо А.В., Шеймович А.В. Автоматический морфологический анализ для корпусов хакасского и древнетюркского языков / Научное обозрение саяно-алтая рецензируемый научный журнал, – № 2(08), 2014 (Периодичность – 2 раза в год. серия: Филология. Выпуск 2). – С. 9–31.; Сулейманов Д.Ш., Гильмуллин Р.А., Гатауллин Р.Р. Морфологический анализатор татарского языка на основе двухуровневой модели морфологии // Пятая Международная конференция по компьютерной обработке тюркских языков «TurkLang 2017». – Труды конференции. В 2-х. Т 2. – Казань: Издательство Академии наук Республики Татарстан, 2017. – 327 с.

<sup>9</sup> Sepir E. Language an introduction to the study of speech. – New York, 1921. – 246 p.; Blumfeld L. An introduction to the study of language. – Amsterdam, 1983. – 292 p.; Yakobson R. Fundamentals of Language. – Berlin, – 91 p.; Хомский Н. Синтаксические структуры // Новое в лингвистике. Вып. 2. – М., 1962. – С. 412–527.; Лосев

bor qoʻllanilgan. Keyinchalik K.B.Baratoyev, B.G.Glinskiy, A.I.Uyumov, I.B.Novik, V.A.Shtoff, Y.A.Jdanov, E.V.Busalova, F.N.Gurbanov, V.A.Vennikov, Y.F.Kirov, L.N.Murzin, I.I.Revzin<sup>10</sup> kabi olimlarning ilmiy ishlarida modellashtirish metodining umumiy mohiyati, modelning negizi, ilmiy bilishdagi funksiyalari va tasnifi masalalari tadqiq etilgan.

Oʻzbek tilshunosligida sintaktik sathni modellashtirishga doir tadqiqotlar XX asrning 70–80-yillarida A.Nurmonovning monografik ishi bilan boshlanadi<sup>11</sup>. Chunonchi, minimal sodda gap qoliplarini ishlab chiqish<sup>12</sup>, qoʻshma gaplarning sistemaviy-struktur tadqiqi<sup>13</sup>, gapda yoʻqlik-mavjudlik belgilarining struktur qolipi<sup>14</sup>, til sathlarida umumiylik-xususiylilik dialektikasining namoyon boʻlishi<sup>15</sup>, soʻz birikmasining shakliy, joylashuv va maʼnoviy qoliplari<sup>16</sup>, bundan tashqari, morfemik sath birliklari<sup>17</sup> va soʻz yasalishini modellashtirish muammolari ham monografik planda oʻrganilgan. Biroq morfologik birliklarni modellashtirish maxsus tadqiqotlar predmeti boʻlmagan, u oʻz yechimini kutayotgan murakkab va muammoli masalalardan biri sanaladi.

Oʻzbek kompyuter lingvistikasida matnning leksikografik ishlovi va lingvostatistik tahlili borasida A.Poʻlatov, M.Mahmudov, M.Ayimbetov, S.Karimov, S.Rizayev, S.Muhamedov, G.Jumanazarova, A.Babanarov, D.Oʻrinboyeva, A.Norov, I.Qosimova<sup>18</sup> larning ilmiy izlanishlari diqqatga sazovor.

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A.Ф. Введение в общую теорию языковых-моделей. – М., 1968. – С. 13–20.; Harris Z. Structural Linguistics. – Chicago, 1960, – 408 p. Hokket Ch. A course in modern linguistics. – New York, 1958. – 648 p.

<sup>10</sup> Венников В.А. Теория подобия и моделирования. – М., 1986. – 489 с.; Киров Е.Ф. Теоретические проблемы моделирования языка. – Казань, 1989. – 265 с.; Мурзин Л.Н. Лингвистическое моделирование и деривация речевой деятельности // Деривация в речевой деятельности. – Пермь, 1988. – С. 52–62.; Ревзин И.И. Модели языка. – М.: Академии наук, 1962. – 194 с.

<sup>11</sup> Нурмонов А.Н. Проблемы системноисследования синтаксиса узбекского языка. – Ташкент, 1982. – 152 б.

<sup>12</sup> Курбонова М. Ўзбек тилшунослигида формал-функционал йўналиш ва содда гап курилишининг талқини: Филол. фан. д-ри. ...дисс. автореф. – Тошкент, 2001. – 51 б.; Абузалова М. Ўзбек тилида содда гапнинг энг кичик курилиш қолипи ва унинг нутқда воқеланиши: Филол. фан. номз. ...дисс. автореф. – Тошкент, 1994. – 19 б.

<sup>13</sup> Сайфуллаева Р.Р. Ҳозирги ўзбек тилида кўшма гапларнинг формал-функционал талқини. – Тошкент: Фан, 1994. – 257 б.

<sup>14</sup> Лутфуллаева Д.Э. Гапнинг семантик-синтактик курилиш қолипи ва пропозитив структураси ўртасидаги муносабат (ўзбек тилидаги йўқлик-мавжудлик белгилари асосида зидланувчи гаплар мисолида): Филол. фан. д-ри. ...дисс. – Тошкент, 2006. – 235 б.

<sup>15</sup> Набиева Д. Ўзбек тилининг турли сатҳларида умумийлик ва хусусийлик диалектикасининг намоён бўлиши. – Тошкент: Шарқ, 2005. – 166 б.

<sup>16</sup> Назарова С. Бирикмаларда сўзнинг эркин боҳланиш омиллари: Филол. фан. номз. ...дисс. автореф. – Тошкент, 1997. – 21 б.

<sup>17</sup> Мирзакулов Т. Ўзбек тили морфемикасининг асосий аспекти ва уларнинг муносабатлари. – Хўжанд, 1992. – 50 б.

<sup>18</sup> Пўлатов А.К., Мухамедова С. Компьютер лингвистикаси. – Тошкент, 2007. – 117 б.; Махмудов М.А., Пиотровская А.А., Садыков Т. Система машинного анализа и синтеза тюркской словоформы // Переработка текста методами инженерной лингвистики. – Минск, 1982.; Айымбетов М.К. Опыт лингвостатистического анализа лексики и морфологии каракалпакского публицистического текста: Автореф. дисс... канд. фил. наук. – Ташкент, 1987.; Каримов С., Қаршиев А., Исроилова Г. Абдулла Қаҳҳор асарлари тилининг луғати. Алфавитли луғат. Частотали луғат. Терс луғат. – Тошкент, 2007. – 434 б.; Ризаев С. Ўзбек тилининг лингвостатистик тадқиқи: Филол. фан. д-ри. ...дисс. автореф. – Тошкент, 2008.; Мухаммедов С.А. Статистический анализ лексико-морфологической структуры узбекских газетных текстов: Автореф. дисс... канд. фил. наук. – Ташкент, 1980. – 88 б.; Жуманазарова Г.У. Фозил Йўлдош ўғли дostonлари тилининг лингвопоэтикаси: Филол. фан. д-ри. ...дисс. автореф. – Тошкент, 2017. – 50.; Бабанаров А. Разработка принципов построения словарного обеспечения турецко-русского машинного перевода: Автореф. дисс... канд. фил. наук. – Л., 1981. – 17 с.; Ўринбоева Д.Б. Ўзбек фольклори матнларининг лингвостатистик тадқиқи: Филол. фан. номз. ...дисс. – Тошкент, 2010. – 121 б.; Норов А. Компьютер лингвистикаси асослари. – Қарши,

Keyinchalik o‘zbek-ingliz tili mashina tarjimasining lingvistik ta’minoti<sup>19</sup>, o‘zbek tili mualliflik korpusi<sup>20</sup> hamda til korpusi lingvistik bazasini tuzish tamoyillari<sup>21</sup>, milliy til morfologik analizatorini yaratish masalalari<sup>22</sup>, o‘zbek tili birliklarini grafematik tahlil qilish<sup>23</sup> va sintaktik qoliplashtirish muammolari<sup>24</sup> monografik planda tadqiq etildi. Otlarni avtomatik tahlil qilish<sup>25</sup> hamda ot va sifat so‘z turkumlari morfologik analizini avtomatlashtirishning dasturiy jihatlari yoritildi<sup>26</sup>.

Hozirda morfologik tahlilning nazariy asoslari, umumiy tavsifi, ishlash tamoyillari, grammatik kategoriyalar va lingvistik modellar tavsifi Kioto university (Yaponiya), Australian National University (Avstraliya), Istanbul texnika universiteti (Turkiya), Moskva davlat universiteti va Moskva davlat lingvistika universiteti (Rossiya)da; matnga morfologik va sintaktik ishlov berish modellari hamda morfologik analizator tuzish masalalari esa Xarkov davlat pedagogika universiteti (Ukraina) va Baki Dövlət universiteti (Ozarbayjon)da tadqiq etilgan<sup>27</sup>. O‘zbek tili mualliflik korpusi va uning lingvistik ta’minoti O‘zbekiston Milliy universiteti, Toshkent davlat o‘zbek tili va adabiyoti universiteti va Toshkent axborot texnologiyalari universiteti (O‘zbekiston)da tadqiq etilmoqda. Shu bilan birga, Buxoro davlat universiteti, Qarshi davlat universiteti va Termiz davlat universitetida ayrim ilmiy-amaliy tadqiqotlar amalga oshirilmoqda.

**Tadqiqotning dissertatsiya bajarilgan oliy ta’lim muassasasining ilmiy-tadqiqot ishlari rejalari bilan bog‘liqligi.** Dissertatsiya Andijon davlat universitetining ilmiy-tadqiqot ishlari rejasiga muvofiq “Tilshunoslikning zamonaviy yo‘nalishlari: muammo va vazifalar” mavzusi doirasida bajarilgan.

**Tadqiqotning maqsadi** borliq elementlari o‘rtasidagi dialektik munosabat hamda o‘zbek tili so‘z turkumlarini milliy modellashtirish tamoyillarini ot so‘z turkumining milliy modellari asosida aniqlashdan iborat.

#### **Tadqiqotning vazifasi:**

borliq elementlari o‘rtasidagi dialektik munosabat hamda lingvistik modellarning nazariy asoslarini tadqiq etish orqali modellashtirish metodining tilshunoslik va kompyuter lingvistikasi sohasidagi ahamiyatini chuqurroq yoritish;

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2017. – 136 б.; Қосимова И.А. Ўзбек, рус ва инглиз тилларидаги феъл шакллари синтез ва анализ қилишнинг компьютер дастури. – Тошкент, 2005. – 126 б.

<sup>19</sup> Abdurahmonova N. Mashina tarjimasining lingvistik ta’minoti. Monografiya, – Toshkent, 2018. – 175 b.

<sup>20</sup> Хамроева Ш. Ўзбек тили муаллифлик корпусини тузишнинг лингвистик асослари: Филол. фан. бўйича фалсафа доктори (PhD)...дисс. – Қарши, 2018. – 250 б.

<sup>21</sup> Эшмўминов А.А. Ўзбек тили миллий корпусининг синоним сўзлар базаси: Филол. фан. бўйича фалсафа доктори (PhD) ...дисс. – Қарши, 2019. – 140 б.

<sup>22</sup> Хамроева Ш. Ўзбек тили морфологик анализаторининг лингвистик таъминоти: Филол. фан. д-ри ...дисс. – Тошкент, 2021. – 268 б.

<sup>23</sup> Абжалова М.А. Ўзбек тилидаги матнларни тахрир ва таҳлил қилувчи дастурнинг лингвистик модуллари: Филол. фан. бўйича фалсафа доктори (PhD)...дисс. – Фарғона, 2019. – 164 б.

<sup>24</sup> Qurbonova M., Rahmatilloeva M. O‘zbek tilida sintaktik qoliplar va matnning avtomatik tarjimasini. Monografiya. – Toshkent: Ma’rifat, 2023. – 176 b.

<sup>25</sup> Орхун М. Computational analysis of uzbek nouns / Шестая Международная конференция по компьютерной обработке тюркских языков «TurkLang-2018». (Труды конференции) – Ташкент, 2018. – 320 с.

<sup>26</sup> Болтаев Т.Б., Ибрагимов С.И. О проекте программной системы морфологического анализа узбекского языка // <http://buxdu.uz/index.php/uz/>; Болтаев Т.Б., Кузьминов Т.В., Поттосин И.В. О структурном конструировании программ и инструментах его поддержки // Среда программирования: методы и инструменты. – Новосибирск, 1992, – С. 22–37.

<sup>27</sup> Хамроева Ш. Ўзбек тили муаллифлик корпусини тузишнинг лингвистик асослари: Филол. фан. бўйича фалсафа доктори (PhD)...дисс. – Қарши, 2018. – Б. 8.

har bir tilda o'ziga xos milliy modellarning mavjudligini otning leksik-semantik, morfologik va sintaktik milliy modellarini ishlab chiqish orqali ko'rsatish; o'zbek tili morfologik sath birliklari, xususan, so'z turkumlarini milliy modellashtirishning asosiy tamoyillariga doir tavsiyalarni ishlab chiqish;

ot so'z turkumining leksik-semantik, morfologik va sintaktik sathdagi funksiyalarini milliy modellar orqali kengroq ochib berish;

o'zbek tili milliy korpusi uchun ot so'z turkumining milliy lingvistik modellarini yaratish;

ot so'z turkumiga mansub birliklarning so'z birikmasi tarkibidagi pozitsiyasini tahlil qilish orqali ularning kompozitsion milliy modellarini ishlab chiqish.

**Tadqiqotning obyektini** o'zbek tilining ot so'z turkumi tashkil etadi.

**Tadqiqotning predmeti sifatida** ot so'z turkumining leksik-semantik va grammatik paradigmalarning milliy lingvistik modellari belgilangan.

**Tadqiqot usullari.** Dissertatsiyani tayyorlashda induktiv va deduktiv metodlar, shuningdek, sistem tahlil, funksional tahlil, lingvostatistik tahlil, o'zaro taqqoslash hamda sintez va analiz usullaridan foydalanildi.

**Tadqiqotning ilmiy yangiligi:**

borliq elementlarining dialektik munosabati masalalari, turli tizimli tillarda milliy modellar mavjudligi va ularning ifoda imkoniyatlari, o'zbek tili milliy korpusi uchun milliy shakllarni saqlagan lingvistik modellar tamoyillari, xususan, ot so'z turkumiga mansub leksik birliklarning lingvistik-semantik, morfologik va sintaktik paradigmalari milliy modellashtirish asosida aniqlangan;

otning ma'no guruhlarini keng ko'lamli milliy modellashtirish va lingvostatistik tahlil asosida 37 ta, shu jumladan, sanalish-sanalmaslik xususiyatiga ko'ra 8 turdagi struktur milliy modellar ishlab chiqilgan. Ot so'z turkumiga mansub birliklar o'rtasidagi dialektik munosabatlar makrosistem, mikrosistem, yadro, transpozitsion va struktur modellar orqali asoslangan;

otning semantik maydonidagi paradigmalarning yosh, jins va tur xususiyatlari, ekstensional-intensionallik, butun-qism, vazifadoshlik, sinonimiya va darajalanish munosabatlari lingvistik ta'minot sifatida milliy modellashtirilgan, atoqli otlar alohida tizim sifatida lingvomadaniy tamoyil asosida o'zbek tilining milliy korpusi uchun lingvistik jihatdan modellashtirilgan. Atoqli otlarning etnografik va milliy-madaniy xususiyatlari [  $Ot_{Muhammad+}^{A-antro}$  ], [  $Ot_{istak}^{A-antro}$  ], [  $Ot_{niyat}^{A-antro}$  ], [  $Ot_{Abdu+}^{A-antro}$  ], [  $Ot_{+bek}^{A-antro}$  ], [  $Ot_{gul+}^{A-antro}$  ], [  $Ot_{+niso}^{A-antro}$  ]; olamning lisoniy manzarasida atoqli otlar munosabati [  $Ot_{topo}^{A-nekro}$  ], [  $Ot_{antro}^{A-nekro}$  ], [  $Ot_{kosmo}^{A-fito}$  ], [  $Ot_{zoo}^{A-kosmo}$  ], [  $Ot_{antro}^{A-kosmo}$  ], [  $Ot_{mifo}^{A-ergo}$  ] kabi transnimizatsion modellar orqali dalillangan;

ot so'z turkumiga oid birliklarning gap va so'z birikmasidagi pozitsiyasi tahlil qilinib, so'z birikmasi turlari, izohlovchi-izohlanmish munosabati hamda tur-jins tuzilmasidagi birikmalarning milliy modellari yaratilgan, otning gapdagi vazifasini ko'rsatuvchi kompozitsion tuzilishi egalik, kelishik va son kategoriyalarining o'zaro moslashuvi asosida yuzaga chiqishi hamda otning leksik-semantik, morfologik va sintaktik sathdagi funksional xususiyatlari milliy modellar asosida isbotlangan.

**Tadqiqotning amaliy natijalari** quyidagilardan iborat:

tadqiqotdan tilshunoslikning pragmalingvistika, sotsiolingvistika, lingvomadaniyatshunoslik, nomshunoslik, kognitologiya va kompyuter lingvistikasi kabi yo‘nalishlarida, xususan, leksik-semantik va grammatik tizimlarni chuqurroq tadqiq etish hamda lingvistik modellashtirish nazariyasini rivojlantirishda foydalanish mumkinligi asoslangan.

dissertatsiya doirasida yaratilgan milliy modellar raqamli texnologik tizimlarning lingvistik ta‘minoti, xususan, o‘zbek tilining elektron morfologik lug‘atini yaratish hamda o‘zbek tilshunosligini sistemaviy-struktur jihatdan tadqiq etishda muhim manba sifatida xizmat qilishi belgilangan.

ilmiy izlanishlar natijasida ot so‘z turkumi ma‘no guruhlarida oid 37 xil milliy modellar ishlab chiqilgan, shuningdek, semantik maydon va olamning lisoniy manzarasidagi paradigmalarni milliy modellashtirishda lingvomadaniy tamoyillarning ahamiyati yuzasidan mulohazalar ilgari surilgan.

**Tadqiqot natijalarining ishonchliligi** muammoning aniq qo‘yilgani, izlanish yuzasidan chiqarilgan xulosalarning metodologiyaga mosligi, soha uchun dolzarb masalalarning hal etilishi, lisoniy dalillarning nazariy asoslanganligi, tadqiqot himoyaga chiqarilgan holatlarining qiyosiy-nazariy usullar yordamida yechilishi, shuningdek, tadqiqot ishlarining chop etilishi tavsiya qilingan mamlakat va chet el ilmiy jurnallarida, respublika va xalqaro ilmiy anjumanlarda natijalarning e‘lon qilinishi hamda xulosalarning amaliyotga joriy etilganligi bilan izohlanadi.

**Tadqiqot natijalarining ilmiy va amaliy ahamiyati.** Tadqiqot natijalarining ilmiy ahamiyati lingvistik modellashtirishda ilgari mavjud bo‘lmagan milliy yondashuvni shakllantirish, borliq elementlari o‘rtasidagi dialektik munosabatlarni lingvomadaniy jihatdan chuqurroq o‘rganish hamda o‘zbek kompyuter lingvistikasini nazariy jihatdan boyitishga xizmat qilishi bilan belgilanadi.

Tadqiqot natijalarining amaliy ahamiyati lingvistik ta‘minot sifatida o‘zbek tilining milliy korpusi rivojiga xizmat qilishi, tilni lingvostatistik tavsiflash, shuningdek, sun‘iy intellekt tizimlari, morfoanalizatorlar va avtomatik tarjima dasturlariga integratsiya qilish uchun poydevor yaratishi bilan izohlanadi.

**Tadqiqot natijalarining joriy qilinishi.** Tadqiqotda ilgari surilgan nazariy takliflar, amaliy tavsiyalar va xulosalar quyidagilarga tatbiq etilgan:

turli tizimli tillarda milliy modellarning mavjudligi va ularning ifoda imkoniyatlari, o‘zbek tilining milliy korpusi uchun milliy shakllarni saqlagan lingvistik modellar tamoyillari, xususan, otga xos leksik birliklarning lingvistik-semantik, morfologik va sintaktik paradigmalarini milliy modellashtirishga doir xulosalardan Alisher Navoiy nomidagi Toshkent davlat o‘zbek tili va adabiyoti universiteti huzuridagi Davlat tilida ish yuritish asoslarini o‘qitish va malaka oshirish markazida 2022–2023-yillarda bajarilgan “Xizmat ko‘rsatish obyektlari interaktiv elektron platformasini yaratish” mavzusidagi II-4721101717-raqamli amaliy loyiha doirasida foydalanilgan (2024-yil 8-oktabrdagi 1475-sonli ma‘lumotnoma). Natijada savdo, ishlab chiqarish va xizmat ko‘rsatish obyektlarini milliy-madaniy va etimologik xususiyatlari hamda geografik joylashuviga ko‘ra nomlash tamoyillari ishlab chiqilgan;

ot so‘z turkumiga oid birliklarning gap va so‘z birikmasidagi pozitsiyasi, so‘z birikmasi turlari, izohlovchi-izohlanmish munosabati hamda tur-jins tuzilmasidagi birikmalarning milliy modellarini yaratish, o‘tning gapdagi vazifasini ko‘rsatuvchi kompozitsion tuzilishi egalik, kelishik va son kategoriyalarining o‘zaro moslashuvi asosida shakllanishi, shuningdek, o‘tning leksik-semantik, morfologik va sintaktik sathdagi funksional xususiyatlariga doir xulosalardan Muhammad al-Xorazmiy nomidagi Toshkent axborot texnologiyalari universiteti Samarqand filialida 2021–2023-yillarda “O‘zbek tilining milliy korpusini loyihalash va dasturiy majmua ishlab chiqish” mavzusidagi amaliy loyiha doirasida foydalanilgan (2024-yil 8-noyabrdagi 723/01-01-sonli ma‘lumotnoma). Natijada o‘zbek tilining milliy korpusini loyihalash, lingvistik ta‘minot yaratish hamda lingvistik modellarni ishlab chiqish tamoyillari aniqlangan;

semantik maydon va olamning lisoniy manzarasida tranonimizatsion modellarning ahamiyati, turli so‘z turkumlari, xususan, ot so‘z turkumiga oid birliklarning tranonimizatsiyasi inson va olam o‘rtasidagi emotsional jarayonlar hamda ruhiy va milliy-madaniy munosabatlarni yuzaga keltiruvchi hodisa sifatida ko‘rilishi haqidagi xulosalardan “Toshkent” telekanalida “Siz nima deysiz?” ijtimoiy ko‘rsatuvining 2024-yil 17-yanvar kuni soat 18:00 da namoyish etilgan “*To‘g‘ri so‘zlashni o‘rganaylik*” mavzusidagi sonini tayyorlashda foydalanilgan (2024-yil 4-noyabrdagi 01-15-114-sonli ma‘lumotnoma). Natijada ko‘rsatuv lisoniy manzarani tashkil etuvchi milliy nomlarni yaratishda inson va olam o‘rtasidagi emotsional jarayonlarga tayanilishi xususidagi ilmiy dalillar bilan boyitilgan.

**Tadqiqot natijalarining aprobatsiyasi.** Tadqiqot natijalari 4 ta ilmiy-amaliy konferensiyada, jumladan, 2 ta xalqaro va 2 ta respublika anjumanida ma‘ruza shaklida taqdim etilib, jamoatchilik muhokamasidan o‘tkazilgan.

**Tadqiqot natijalarining e‘lon qilinganligi.** Dissertatsiya mavzusi bo‘yicha 13 ta ilmiy ish nashr ettirilgan, jumladan, O‘zbekiston Respublikasi Oliy ta‘lim, fan va innovatsiyalar vazirligi huzuridagi Oliy attestatsiya komissiyasining doktorlik dissertatsiyalari asosiy natijalarini chop etish uchun tavsiya etilgan ilmiy nashrlarda 6 ta maqola, ulardan 2 tasi xorijiy jurnallarda e‘lon qilingan.

**Dissertatsiyaning tuzilishi va hajmi.** Dissertatsiya kirish, uch bob, xulosa, adabiyotlar ro‘yxati va ilovadan iborat. Hajmi 150 sahifani tashkil etadi.

## DISSERTATSIYANING ASOSIY MAZMUNI

**Kirish** qismida dissertatsiya mavzusining dolzarbligi, zarurati asoslangan, muammoning o‘rganilganlik darajasi oydinlashtirilgan, tadqiqotning maqsadi va vazifalari, obykti va predmeti belgilangan, mavzuning respublika fan va texnologiyalari rivojlanishining ustuvor yo‘nalishlariga mosligi ko‘rsatilgan, ilmiy yangiligi va amaliy natijalari yoritilgan, olingan natijalarning ishonchliligi, ilmiy va amaliy ahamiyati asoslangan, joriy etilishi, e‘lon qilinganligi, ishning tuzilishi va hajmi bayon etilgan.

Dissertatsiyaning birinchi bobi “**Dunyo tilshunosligida modellashtirishga doir tadqiqotlar tavsifi**” deb nomlangan bo‘lib, unda lingvistik modellashtirish metodining shakllanishi va taraqqiyoti, ro‘y bergan o‘zgarishlar, ayniqsa, model hissiy va ilmiy bilish kesishmasining mahsuli sifatida o‘rganilgan.

Bobning “**Dunyo tilshunosligiga modellashtirish metodining kirib kelishi va o‘rganilishi**” nomli birinchi faslida modellashtirish metodining ilk nazariy-metodologik asoslari, tilshunoslikka kirib kelishi va mazmun-mohiyati haqida fikr yuritiladi, shuningdek, bu boradagi ilmiy izlanishlar va tadqiqotlar tahlilga tortiladi.

Olamni ilmiy bilish va olam uzvlarini modellashtirish Karl Popperning uch olam haqidagi nazariyasidan boshlangan. Bu nazariyaga ko‘ra, fizik olam, fikriy olam va g‘oyalar olami mavjud bo‘lib, fizik olamdan g‘oyaviy olamga tomon boriladi: sezgi a‘zolarimizga fizik olam taqdim etiladi va u ongimizda fikriy olam sifatida aks etadi. Fikriy olamdagi muhim belgilarni umumlashtirish orqali konstruktiv – g‘oyaviy olam shakllanadi. Konstruktiv olam obyektning model, sxema, chizma, konstrukt hamda A.F.Losev tomonidan substrat<sup>28</sup> deb atalgan shaklida namoyon bo‘lishidir.

Amerikalik olim K.Shennon tashqi olam haqidagi ma‘lumotlarning insonga uzatilishini *manba* → *uzatuvchi* → *kanal* → *priyomnik* (*qabul vositasi – Sh.Z. ta’kid bizniki*) → *axborotni oluvchi* sxemasida bayon qiladi<sup>29</sup>. A.Rahimov esa uni kommunikatsiya jarayonining modeli sifatida izohlaydi<sup>30</sup>. Bizningcha, kommunikatsiya jarayoni “*manba* → *kanal* → *kommunikator* → *kanal* → *nutqiy vaziyat* + *nutqiy xabar* + *nutqiy maqsad* + *nutqiy ta’sir* ← *adresat*” sxemasiga ega.

Til birliklarining nutqda reallashuvida muayyan mantiqiy qonuniyatlar mavjud. Jumladan, Aristotel ta’limoti natijasida formal mantiq yuzaga keldi. Nemis faylasufi Gegel tomonidan dialektik mantiqqa asos solindi. Keyinroq Leybnis va Gilbertlar mantiq faniga matematik simvollarni tatbiq etdi. XIX asrga kelib nemis olimi G.Frege, ingliz olimi J.Bul, rus olimi V.Poretskiy ishlarida simvolik mantiq asoslari yaratildi<sup>31</sup>. Shu tariqa mantiq, grammatika, semiotika va algoritm modellashtirish metodining tilshunoslikka tatbiqida poydevor bo‘lib xizmat qila boshladi.

Fanda modellashtirish metodi asosida bashorat qilish, model nazariy asosga ega degan fikrga tayanadi. Model (*fr.modele* < *lot.modulus* – o‘lchov, me‘yor, nusxa, andoza) biror narsaning xuddi o‘zidek yoki kichraytirib, kattalashtirib olingan nusxasi<sup>32</sup> bo‘lib, u o‘rganilayotgan obyekt haqidagi nazariy bilimlarni o‘zida jamlagan holda, bu bilimlar asosida hosila obyektning yaratilishini ta’minlaydi.

Modellar dastlab amaliy sohalarda qo‘llanilgan bo‘lsa, keyinchalik ilm-fanning ijtimoiy sohasiga ham kirib keldi. XX asrning 50-yillaridan tilshunoslikda “*mashina tarjimai*”, “*mashina tilshunosligi*” atamaları qo‘llana boshlandi<sup>33</sup>. Amerikalik olim N.Xomskiyning formal grammatika haqidagi qarashlari (formal grammatik nazariyasi) asosida kompyuter lingvistikasi shakllandi<sup>34</sup>. Shu tariqa lingvistik model tushunchasi XX asrda E.Sepir, L.Blumfeld, R.Yakobson, Z.Xarris, Ch.Hokket, S.Markus, A.F.Losev, N.Xomskiy<sup>35</sup> kabi olimlar tomonidan ilk bor qo‘llanildi.

<sup>28</sup> Лосев А.Ф. Введение в общую теорию языковых моделей. – М.: Наука, 1968. – С. 16.

<sup>29</sup> Эко У. Отсутствующая структура. Введение в семиологию. – М.: Петрополис, 1998. – С. 45.

<sup>30</sup> Rahimov A. Компьютер лингвистики asoslari. – Toshkent: Akademnashr, 2011. – В. 18.

<sup>31</sup> Пулатов А.К., Мухамедова С. Компьютер лингвистикаси. – Тошкент, 2007. – Б. 10.

<sup>32</sup> Философский словарь. – М.: Изд-во полит. Лит-ры, 1991. – С. 267.

<sup>33</sup> Grishman R. Computational linguistics. Cambridge University Press, 1994. – P. 4.

<sup>34</sup> Гладкий А.В., Мельчук И.А. Элементы математической лингвистики. – М.: Наука, 1969. – С.7.

<sup>35</sup> Sepir E. Language an introduction to the study of speech. – New York, 1921. – 246 p.; Blumfeld L. An introduction to the study of language. – Amsterdam, 1983. – 292 p.; Yakobson R. Fundamentals of Language. – Berlin, – 91 p.;

Jahon tilshunosligida lingvistik tushunchalarni modellashtirish masalasi sintaktik sathda maydonga keldi. Jumladan, Sepirning simbolizatsiyaga oid farazlari<sup>36</sup>ga tayangan formal tillar grammatik nazariyasining soʻz turkumlari, gap boʻlamlari va gap konstruksiyalari asosida ish koʻrishi<sup>37</sup>, XX asrning 50-yillarida amerikalik olim Charlz Friz tomonidan ilgari surilgan gap strukturasi modellashtirish gʻoyasida gap muayyan soʻz turkumlariga oid boʻlgan soʻzlar zanjiridan iboratligi va tahlilda morfologiya bazasiga tayanilishi taʼkidlanadi<sup>38</sup>. Fransuz tilshunosi Lyusyey Tenyer tomonidan ilgari surilgan verbosentrizm konsepsiyasida esa gap konstruksiyalarining eng sodda (primitiv) modeli – maʼlum soʻz turkumiga mansub gap boʻlamlari modeli ekanligi bayon qilinadi. E.I.Shutova sintaktik modelning turli xil real koʻrinishlari uchun umumiy boʻlgan namunaviy maʼnoni sintaktik invariant deb, bu invariant *leksik-semantik*, *leksik-morfologik*, *morfologik* va *kompozitsion variantlar* asosida namoyon boʻlishini taʼkidlaydi<sup>39</sup>.

Model – til birligi, uning nutqda voqelanishi esa nutq birligi sifatida namoyon boʻladi. Nutqiy hodisalarni eng muhim va oʻxshash belgilari asosida umumlashtirish natijasida tilshunoslikda invariant, substansiya, javhar, qolip, chizma, sxema, konstrukt, qurilma, formula kabi atamalar bilan ifodalanadigan model shakllanadi. Ushbu faslda modellashtirish metodining nazariy jihatlari bilan bir qatorda, uning amaliy jarayonga tatbiqi ham yoritilgan.

Bobning ikkinchi fasli “**Modellashtirish metodining oʻzbek tilshunosligiga tatbiq etilishi**” deb nomlanadi. Ushbu faslda oʻzbek tilshunosligida modellashtirish metodiga bagʻishlangan ilk tadqiqotlarda, asosan, tilning sintaktik sathini modellashtirish masalasiga alohida eʼtibor qaratilgani taʼkidlanadi. Shu asosda fonologik, morfemik, leksik va morfologik birliklarni modellashtirishga olib keluvchi dialektik munosabatlarning sintaktik sath bilan uzviy bogʻliqligi, shuningdek, sintaktik sathga olib boruvchi yoʻlning morfologik birliklarni modellashtirish orqali ochilishi haqida ilmiy mulohazalar yuritiladi.

Oʻzbek tilshunosligida morfemik sath birliklarini modellashtirish muammosi ilk bor T.Mirzaqulov tadqiqotlarida ilgari surilgan. Sh.Mirzaqulov tadqiqotida esa soʻz yasalihi paradigmasini modellashtirishga doir harakatlar seziladi<sup>40</sup>. A.Nurmonov soʻz shaklining qurilish materiali morfema ekanligini asoslab, morfemalar munosabatidan tashkil topgan yasama soʻz modelini *leksik morfema + yordamchi morfema* sxemasida, yaʼni [M<sub>1</sub> + M<sub>yord</sub>] shaklida keltiradi va uni invariant sifatida eʼtirof etadi<sup>41</sup>. D.Nabiyeva *leksik morfema + grammatik*

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Хомский Н. Синтаксические структуры // Новое в лингвистике. Вып. 2. – М., 1962. – С. 412–527.; Лосев А.Ф. Введение в общую теорию языковых-моделей. – М., 1968. – С. 13–20.; Harris Z. Structural Linguistics. – Chicago, 1960, – 408 p.; Hokket Ch. A course in modern linguistics. – New York, 1958. – 648 p.

<sup>36</sup> [https://studopedia.ru/6\\_11435\\_ponyatie-i-sostav-lingvisticheskogo-obespecheniya.html](https://studopedia.ru/6_11435_ponyatie-i-sostav-lingvisticheskogo-obespecheniya.html)

<sup>37</sup> Rahimov A. Kompyuter lingvistikasi asoslari. – Toshkent: Akademyashr, 2011. – B. 45.

<sup>38</sup> Пулатов А.К., Мухамедова С. Компьютер лингвистикаси. – Тошкент, 2007. – Б. 32.

<sup>39</sup> Шутова Е.И. Вопросы теории синтаксиса. – М.: Наука, 1984. – С. 107.

<sup>40</sup> Мирзакулов Т. Ўзбек тили морфемикасининг асосий аспектлари ва уларнинг муносабатлари. – Хўжанд, 1992. – 50; Мирзакулов Т. Ўзбек тили морфем парадигматикаси ва синтагматикаси масалалари: Филол. фан. д-ри. дисс.... автореф. – Тошкент, 1994. – 82 б.; Мирзакулов Ш. Ўзбек тилида сўз ясаиш маъноси ва парадигмаси: Филол. фан. номз. ...дисс. автореф. – Самарқанд, 1995. – 22 б.

<sup>41</sup> Нурмонов А. Туркий тилларда сўз ва уларни туркумларга ажратиш муаммолари // Танланган асарлар. 3 жилдлик. 1-жилд. – Тошкент: Академнашр, 2012. – Б. 186.

*morfemaning* (**MI** + **Mg**) modelini invariant deb, bu modelning allomorflar bilan to'ldirilgan shaklini variant sifatida izohlaydi<sup>42</sup>. Mazkur ishda *leksik morfema* + *grammatik morfema* sxemasi asosida [**M<sub>1</sub>** + **M<sub>g</sub>**] milliy modeli ishlab chiqilgan.

Ba'zi adabiyotlarda til sathlaridagi umumiylikni belgilashda leksemaga tayanuvchi yondashuvlar ilgari suriladi. Jumladan, L.Blumfild so'z (leksema)ning konstruksiya ekanligini ta'kidlaydi<sup>43</sup>. Leksema modellashtirish jarayonida tayanch nuqta – yadro model sifatida qaraladi. Shu asosda til birliklarining eng yuqori umumlashmasi bo'lgan sintaktik birliklarni modellashtirish masalasi R.Sayfullayeva, M.Qurbonova, D.Lutfullayeva, D.Nabiyeva, M.Abuzalova, S.Nazarova<sup>44</sup> kabi tilshunos olimlarning monografik tadqiqotlarida yoritilgan. Mazkur ishlarda gapning qurilish qoliplariga nisbatan *struktur model*, *struktur sxema*, *gap qolipi*, *gap modeli* kabi terminlar qo'llanadi. Bunday struktur sxemalar o'zbek tilshunosligida *sintaksema*, *kognitema*, *konstrukt*, *model*, *qolip* atamaları orqali ham ifodalanadi. Jumladan, G.Toirova<sup>45</sup> tadqiqotida modul termini qo'llanadi, biroq bu tushuncha modelning mazmunini to'liq ifodalay olmaydi<sup>46</sup>.

Dissertatsiyada eng kichik gaplarning shakl va mazmun munosabatidagi umumlashma milliy modeli [**P<sup>3</sup>**] ko'rinishida taqdim etildi. Bu model *propozitsiya* + *predikat* + *predikativlik* uchligini o'z ichiga oladi. Mazkur model asosida ot predikat uchun [**P<sub>ot</sub><sup>3</sup>**], fe'l predikat uchun [**P<sub>f</sub><sup>3</sup>**] milliy modelini ishlab chiqish imkoniyati mavjud. Bundan tashqari, so'z-gaplar *propozitsiya* + *predikativlik* sxemasiga asoslangan [**P<sup>2</sup>**] modeli hamda minimal gaplar uchun [**Kk<sub>hukm</sub>**] modeli tavsiya etildi. Bu yerda, [**Kk**] – kesim va kesimlik kategoriyasini anglatadi.

Ushbu faslda Sh.Rahmatullayev tomonidan ilgari surilgan frazeologizmlarni modellashtirish masalalari ham ko'rib chiqilgan. O'zbek kompyuter lingvistikasi doirasida amalga oshirilgan tadqiqotlar tahlil qilingan. Jumladan, N.Abdurahmonova<sup>47</sup>, Sh.Hamroyeva<sup>48</sup>, M.Abjalova<sup>49</sup> kabi olimlarning ishlariga munosabat bildirilgan.

<sup>42</sup> Набиева Д. Ўзбек тилининг турли сатҳларида умумийлик ва хусусийлик диалектикасининг намоён бўлиши. – Тошкент: Шарқ, 2005. – 166 бет. – Б. 18.

<sup>43</sup> Блумфилд Л. Язык. – Москва, 1968. – С. 225.

<sup>44</sup> Сайфуллаева Р.Р. Ҳозирги ўзбек тилида қўшма гапларнинг формал-функционал талқини. – Тошкент: Фан, 1994. – 356 б.; Қурбонова М. Ўзбек тилида формал-функционал йўналиш ва содда гап қурилишининг талқини. Филол. фан д-ри. дисс... автореф. – Тошкент, 2001. – 51 б.; Лутфуллаева Д.Э. Гапни семантик-синтактик қурилиш қолипи ва пропозитив структураси ўртасидаги муносабат (ўзбек тилидаги йўқлик-мавжудлик белгилари асосида зидланувчи гаплар мисолида). Филол. фан. д-ри... дисс. автореф. – Тошкент, 2006.; Набиева Д. Ўзбек тилининг турли сатҳларида умумийлик ва хусусийлик диалектикасининг намоён бўлиши. – Тошкент: Шарқ, 2005. – 166 б.; Abuzalova M. O'zbek tilida sodda gaplarning eng kichik qurilish qolipi va uning nutqda voqelanishi. Filol. fan. nomz... diss. – Toshkent, 1994. – 134 б.; Nazarova S.A. Birikmalarda so'zning erkin bog'lanish omillari. Filol. fan. nomz... diss. avtoref. – Toshkent, 1997. – 26 б.

<sup>45</sup> Тоирова Г. Лингвистик базани тузишда модуллаштиришнинг аҳамияти. // Наманган давлат университети илмий ахборотномаси. – Наманган, 2021 йил 3-сон, – Б. 377–385.

<sup>46</sup> O'zbek tilining izohli lug'ati. – Toshkent: G'afur G'ulom, 2023. – B. 215–216.

<sup>47</sup> Abdurahmonova N. O'zbek tili elektron korpusining kompyuter modellari. Filol. fan. d-ri. ...diss. Avtoref. – Toshkent, 2021. – 30 б.

<sup>48</sup> Хамроева Ш. Ўзбек тили морфологик анализаторининг лингвистик таъминоти: Филол. фан. д-ри. ...дисс. – Тошкент, 2021. – 268 б.

<sup>49</sup> Абжалова М.А. Ўзбек тилидаги матнларни таҳрир ва таҳлил қилувчи дастурнинг лингвистик модуллари: Филол. фан. бўйича фалсафа доктори (PhD)...дисс. – Фарғона, 2019. – 164 б.

Mazkur tadqiqotda xalqaro modellashtirish andozalari inkor etilmaydi, har bir tilning ichki tuzilishi, til egalarining milliy-madaniy xususiyatlari hisobga olingan holda, milliy modellashtirish tamoyillarini aniqlash masalalariga alohida e'tibor qaratiladi. Ayniqsa, ot so'z turkumi misolida o'zbek tili so'z turkumlarini sintez va analiz usullari asosida milliy modellashtirish muammolari yoritiladi. Izlanishlar natijasida o'zbek tili so'z turkumlarini milliy modellashtirishda *deduktiv, induktiv, tushuntirish, mantiqiy bilish, nazariy bilish, mavhumlashtirish, ideallashtirish, soddalashtirish, distributiv, lingvomadaniy, tejamkorlik, empirik, kategorial va sintaktik-semantik tamoyillar* ilgari surilgan.

Ikkinchi bob "**Otning leksik-semantik paradigmalari modellashtirish tamoyillari**" deb nomlanib, unda ot turkumiga mansub so'zlarning leksik-semantik paradigmalari milliy modellashtirish, otning semantik maydoni hamda olamning lisoniy manzarasida atoqli otlar tizimining milliy modellari yoritilgan. Leksik birliklarning paradigmatic munosabati ot so'z turkumi doirasida tadqiq etilgan.

Mazkur bobning "**Struktur talqinda otning ma'no guruhlari modeli**" deb nomlangan birinchi faslda tashqi olamdagi predmetlar xususiyatlarini o'rganish, birlamchi belgilarni ajratib olish, qo'shimcha belgilardan soqit qilish, o'zaro solishtirish, qiyoslash va umumlashtirish asosida **milliy modellashtirish amalga oshirilgan** hamda **lingvostatistik tahlil qilingan**.

Ma'lumki, model obyektlarni ma'lum guruhlariga taqsimlab, ularni tartibga soladi. Shu nuqtayi nazardan, leksemalarni ma'lum sinflarga birlashtirish ham modellashtirish hisoblanadi. Masalan, sezgi a'zolarimizga berilgan mavhum tushunchalar, narsa-hodisalar – *mashinalar, daraxtlar, uylar, kiyimlar, daryolar* – barchasi modellardir. Demak, insonni qurshab turgan borliq modellashtirish ko'rinishga ega bo'lib, so'z turkumlari sistemalashgan birliklar sifatida olam dialektikasining eng yirik modeli sanaladi.

O'zbek kompyuter lingvistikasida predmetni ifodalovchi otning milliy modeli [ **Ot** ] shaklida belgilanadi. Dissertatsiyada yirik paradigma – ot turkumi tarkibida aniq bir shaxs va narsaning nomini ifodalovchi atoqli otlar: *Samarqand, Uchtepa, Munojot, Shahboz* kabilar uchun [ **Ot<sup>A</sup>** ]; predmetning umumiy nomini ifodalovchi *kitob, maktab, ko'cha, uzum, hayvon* kabi turdosh otlar uchun [ **Ot<sup>t</sup>** ]; birlik va ko'plik shakllarida qo'llanuvchi *kitob, olma, uzum, daftar, kompyuter* kabi aniq otlar uchun [ **Ot<sup>a</sup>** ]; ko'plik qo'shimchalarini qabul qilganda miqdor ma'nosini emas, balki kuchaytirish ma'nosini ifodalovchi *ozodlik, sevgi, muhabbat, mehr* kabi mavhum otlar uchun [ **Ot<sup>m</sup>** ]; birlik shaklda bir xil narsalarning bittasini ifodalovchi *uy, xona, kitob, daftar* kabi yakka otlar uchun [ **Ot<sup>y</sup>** ], shuningdek, birlik shaklda ham bir xil narsalarning jamini ifodalovchi *armiya, xalq, o'rmon, olomon, el* kabi jamlovchi otlar uchun [ **Ot<sup>j</sup>** ] modeli taqdim etilgan. Ot so'z turkumining ma'no guruhlari doirasidagi barcha modellar otning milliy modeli asosida shakllantiriladi. Bu esa otning modelini kichik qurilmalarning asosi sifatida **yadro model** deb e'tirof etishga olib keladi.

Dissertatsiyada bevosita kuzatish asosida sezgi a'zolarimizga ta'sir etuvchi *havo, bulut, suv* kabi sanalmaydigan aniq otlar [ **Ot<sup>a1</sup>** ]; *qush, uy, gilam* kabi sanaladigan aniq otlar [ **Ot<sup>a-sk</sup>** ]; *Samarqand, Shahboz, Munojot* kabi

sanalmaydigan atoqli otlar [  $Ot^{A1}$  ]; *muhabbat, sog'inch, qayg'u* kabi sanalmaydigan mavhum otlar [  $Ot^{m1}$  ]; *uy, kalit, ko'zoynak* kabi sanaladigan yakka otlar [  $Ot^{y-sk}$  ]; *xalq, lashkar* kabi sanaladigan jamlovchi otlar [  $Ot^{j-sk}$  ] shaklida modellashtirildi. Shuningdek, mavhum otlar tarkibidagi sanalish xususiyatiga ega bo'lgan otlar (*jin, pari, dev, ajina*) uchun [  $Ot^{m-sk}$  ] milliy modeli yaratildi, sanalmaydigan jamlovchi otlar esa [  $Ot^{j1}$  ] modeliga umumlashtirildi. Masalan: *omma, bashar, xaloyiq* so'zlarida umumlashtirish ma'nosi yuzaga chiqadi. Shu tariqa ot so'z turkumi doirasida sanalish-sanalmaslik mezoni asosida shakllantirilgan milliy struktur modellarning umumiy soni 8 tani tashkil etdi. Bu modellar otning semantik guruhleri o'rtasidagi sistemaviy-paradigmatik munosabatlarni aks ettiruvchi eng kichik semantik-struktur birliklar sifatida tavsiflandi va struktur modellar maqomida baholandi. **Struktur model** – til birliklarining ichki tartib va bo'linishini, ya'ni kategoriyalararo va kategoriyaviy chegaralarni aniqlovchi nazariy qurilma bo'lib, kompyuter lingvistikasi nuqtayi nazaridan tilning formallashtirilgan strukturasi ifodalash imkonini beradi.

Otning ma'no guruhi modellariga struktur model nuqtayi nazaridan sistem model sifatida yondashiladi. Shu bilan birga, otning yadro modeli bilan solishtirilganda, bu modellar struktur model maqomini egallaydi. Ishda mazkur modellar uchun **mikrosistem model** va **transpozitsion model** atamaları qo'llanildi. **Mikrosistem model** – tushunchalar iyerarxiyasida o'ziga xos ikki tomonlama pozitsiyaga ega bo'lgan model bo'lib, u bir tomondan yirik tushuncha tizimining tarkibiy qismi sifatida namoyon bo'lsa, boshqa tomondan o'z tarkibida kichik tushunchalar va elementlarni mujassamlashtiradi. Ya'ni, mikrosistem model – bu bir vaqtning o'zida yuqori darajadagi tushunchaga bog'langan va shu bilan birga, ichki tarkibiy bo'linishga ega bo'lgan ko'p qatlamli modeldir. Dissertatsiyada mikrosistem model va transpozitsion model atamaları bir xil mazmunni ifodalovchi sinonim tushunchalar sifatida ishlatildi.

Shuningdek, dissertatsiyada ot turkumi doirasida yadro model sifatida e'tirof etilgan 1 ta makrosistem model taklif qilindi. Bu model ot so'z turkumining paradigmatic va struktur jihatdan eng yirik va umumlashtiruvchi qurilmasi sifatida talqin qilinadi. Atoqli otlar hamda sanalmaydigan atoqli otlarning modellariga esa teng qiymatli struktur milliy modellar maqomi berildi. Ular makrosistem model tarkibida, leksik-semantik va grammatik xususiyatlar asosida mustaqil struktur birliklar sifatida shakllantirilgan. Izlanishlar va lingvostatistik tahlil natijasida ot so'z turkum doirasida jami 37 ta model mavjudligi aniqlandi.

Bobning “**Ot turkumida semantik maydon modellari**” deb nomlangan ikkinchi faslida semantik maydon tushunchasining mohiyatini tashkil etuvchi “belgi” va “ramz” o'rtasidagi chegaralarni aniqlash, kishilar ongidagi leksemalarni muayyan qonuniyatlar asosida birlashtirish hamda ushbu birlashtirish jarayonida o'zbek tili milliy korpusi uchun lingvistik ta'minot sifatida tilning leksik-semantik tizimini modellashtirish masalalari atroflicha yoritilgan.

Tilga tizim sifatida yondashish, til va nutq munosabatidagi dialektik kategoriyalarni farqlash cheksiz paradigmalar yig'indisini tashkil etuvchi semantik maydonni ulkan sistemaviy hudud sifatida tadqiq etishga olib keladi. Ma'lumki,

semantik maydon atamasi ilk bor Y.Trir tomonidan ishlatilgan. U bu atama ostida “tushunchalar maydoni yoki doirasi”ni nazarda tutgan. O‘zbek tilshunosligida esa semantik maydon haqidagi qarashlar A.Nurmonov, H.Ne‘matov, E.Begmatov, R.Rasulov, Sh.Iskandarova, O.Bozorov, B.Qilichev, A.Sobirov, I.Madrahimov kabi atoqli tilshunos olimlarning izlanishlarida muhim o‘rin egallaydi.

Ot turkumiga mansub paradigmalarda o‘xshash va ayrim farqli leksemalar birlashadi, farqli belgilar o‘xshashlikni inkor eta olmaydi. Masalan, *hayvonlar, daraxtlar, mashinalar* – bular alohida olingan paradigmalaridir. Ular jamiyat a‘zolari ongida mavjud bo‘lib, kompyuter dasturlari xotirasida moddiylashadi. Buni hayvonlar misolida ko‘rib chiqamiz: til egalari ongida umumiylik, mohiyat, imkoniyat sifatida saqlangan *bo‘ri, ayiq, she‘r, sigir, mushuk, echki* kabi zoonimlar kompyuter xotirada [  $Ot^{t-zoo}$  ] model ko‘rinishida umumlashtiriladi.

Dissertatsiyada zoonimlar umumiy bir sinf – ekstensional sifatida [  $Ot^{t-zoo}$  ] milliy modeli tarkibiga, shuningdek, ziddiyatli belgilari asosida ichki paradigma – intensionallar sifatida yovvoyi hayvonlar – [  $Ot^{t-zoo}_{yovvoyi}$  ] hamda uy hayvonlari – [  $Ot^{t-zoo}_{uy}$  ] milliy modellari tarkibiga kiritilishi asoslangan. O‘zbek tilining semantik maydonida bunday uyalar juda ko‘p. Jumladan, P.Safarova uy hayvonlaridan bir qancha LMGlarni ajratadi<sup>50</sup>. Shu nuqtayi nazardan kelib chiqib, dissertatsiyada semantik maydondagi boshqa paradigmalarni ham mazkur yondashuv asosida modellashtirish mumkinligi asoslangan.

Dissertatsiyada paradigma a‘zolari yosh, jins va tur xususiyatlari nuqtayi nazaridan alohida modellashtirilgan. Xususan, gender belgisi asosida *baytal, biya, jiyron...* [  $Ot^{t-zoo}_{ot-(a)}$  ]; *ayg‘ir, saman, yo‘rg‘a, yobu, to‘riq, bedov...* [  $Ot^{t-zoo}_{ot-(e)}$  ] milliy modeli tarkibiga kiritilgan. Shuningdek, vazifadoshlik va butun-qism munosabatiga asoslangan paradigmalarni modellashtirishga ham e‘tibor qaratilgan: *o‘pka, bo‘g‘iz bo‘shlig‘i, un paychalari, og‘iz bo‘shlig‘i, tanglay, til, tish, milk, lablar* kabi nutq tovushlarini hosil qilishda ishtirok etuvchi birliklar [  $Ot^{t-V}_{nutq}$  ] modeli tarkibida vazifadosh paradigma sifatida talqin etilgan; *yeng, yoqa, tugma, etak, jiyak, astar* kabi kiyim elementlari esa [  $Ot^{a-\oplus}_{kostum}$  ] modeli doirasida butun-qism munosabatiga asoslangan paradigma tarkibida tahlil qilingan.

Tadqiqotda darajalanish masalasiga alohida e‘tibor qaratilgan. Paradigma a‘zolarining darajalanishi o‘zbek tilshunosligida S.G‘iyosov, R.Safarova, M.Narziyeva, M.Fayzullayev, O.Bozorov, A.Sobirov, O.Bozorov, I.Madrahimov<sup>51</sup> kabi olimlar tomonidan ilgari surilgan. Ular paradigma doirasida ichki gradual chiziqni aniqlab, bosh ma‘nodan ijobiy yo‘nalishda [  $\rightarrow$  ] hamda salbiy yo‘nalishda

<sup>50</sup> Неъматов Х., Расулов Р. Ўзбек тили систем лексикологияси асослари. – Тошкент: Ўқитувчи, 1995. – Б.113.

<sup>51</sup> Гиясов С.Т. Семантическая структура и компонентный анализ качественных прилагательных узбекского языка: Автореф. дисс... канд. филол. наук. – Ташкент, 1983.; Сафарова Р. Гипонимия в узбекском языке: Автореф. дисс... канд. филол. наук. – Ташкент, 1987.; Нарзиева М. Семантическая структура имен существительных возрастной характеристики лица в узбекском языке: Автореф. дисс... канд. филол. наук. – Тошкент, 1992.; Файзуллаев М. Сравнительно-типологические особенности лексико-семантических групп глаголов психического состояния в русском и узбекском языках: Автореф. дисс... канд. филол. наук. – Ташкент, 1994.; Бозоров О. Ўзбек тилида даражаланиш: Филол. фан. д-ри. ...дисс. автореф. –Тошкент, 1997. – Б. 23–30.; Собиров А. Ўзбек тили лексикасининг систем-структур тадқиқи. Монография. – Ташкент: Booknomy print, 2022. – Б. 173.; Madrahimov I. O‘zbek tilida lingvistik tasnif metodologiyasi. Filol. fan. d-ri. ...diss. avtoref. –Toshkent, 2024. – Б. 37.; Bozorov O. Lingvistik model // O‘zbek tili va adabiyoti. 2008. № 4. – В. 56.

[ ← ] siljish orqali kuchayish darajasini chizma-model asosida ko'rsatadi. Bundan tashqari, ishda *individ* → *chaqaloq* → *go'dak* → *bola* → *o'smir* → *o'spirin* → *yigit* → *qiz* → *juvon* → *ayol* → *kampir* kabi nominal birliklarning darajali munosabati [  $\text{Ot}_{\text{yosh}}^{\uparrow}$  ] modeli asosida ifodalangan. Borliq elementlarini milliy modellashtirish jarayonida mazkur yondashuvga tayanish masalasi o'rta tashlangan.

Otning semantik maydonida sinonimiya (ma'nodoshlik) hodisasi o'zbek tilshunosligida keng ko'lamli o'rganilgan leksik paradigmalardan biri hisoblanadi. Tilshunos olimlar sinonim paradigmalarning shakllanishida so'zga asos bo'lgan idrok obyekti – denotat, mazmuniy tushuncha – signifikat hamda ularning ifodasi – leksemani umumiy tarzda hisobga olish zarurligini ta'kidlaydi. Mazkur yondashuv asosida *vatan*, *diyora*, *yurt*, *maskan*, *go'sha*, *mamlakat*, *o'lka* kabi sinonimik qator tahlil qilingan bo'lib, bu yerda *vatan* so'zi denotat, "tug'ilib o'sgan joy" ma'nosi signifikat, *diyora*, *yurt*, *maskan*, *go'sha*, *mamlakat*, *o'lka* leksemalari esa ifoda vositalari sifatida talqin etiladi. Ushbu leksemalar o'zbek tili milliy korpusining lingvistik ta'minoti sifatida [  $\text{Ot}_{\text{vatan}}^2$  ] milliy modeli doirasida bir butun paradigmatic tizimni tashkil etadi.

H.Nematov va R.Rasulovlarning fikricha, sinonim so'zlar semantik jihatdan salbiy va ijobiy bo'yoqqa ega bo'lishi bilan birga, bo'yoqdorlik xususiyati e'tiborga olinmagan neytral ma'nodagi birliklarni ham qamrab oladi. Ularning ta'kidlashicha, sinonimik qator ichida salbiy va ijobiy guruhlariga mansub leksemalar orasida darajali ziddiyatlar ham kuzatiladi. Masalan, *yuz*, *bet*, *aft*, *bashara*, *turq*, *chehra*, *oraz*, *jamol* sinonimik qator tarkibida *bet*, *aft*, *bashara*, *turq* leksemalari salbiy bo'yoqqa ega bo'lib, [  $\text{Ot}_{\text{-yuz}}^2$  ]; *chehra*, *oraz*, *jamol* leksemalari ijobiy bo'yoqqa ega bo'lib, [  $\text{Ot}_{\text{yuz}\rightarrow}^2$  ] milliy modeli tarkibiga namoyon bo'ladi.

Dissertatsiyada sinonimlarning semantik, uslubiy va funksional xususiyatlarini hisobga olgan holda ishlab chiqilgan milliy modellar ham tahlil qilingan. Xususan, *yuz*, *bet*, *aft*, *bashara*, *turq*, *chehra*, *oraz*, *jamol* kabi sinonimik qator uchun [  $\text{Ot}_{\leftarrow\rightarrow}^{2\uparrow}$  ] yoki [  $\text{Ot}_{\text{-yuz}\rightarrow}^{2\uparrow}$  ] milliy modeli tavsiya etilgan.

Bobning uchinchi fasli "**Atoqli otlar alohida tizim sifatida**" deb nomlanadi. Ushbu faslda olamning lingvistik manzarasini tashkil etuvchi atoqli otlar tizimida kuzatiladigan tranonimizatsiya hodisasi milliy modellar asosida tahlil qilinadi va uning paradigmatic xususiyatlari ochib beriladi.

O'zbek onomastikasining ko'lami nihoyatda keng bo'lib, bu atoqli otlar soni va ularning turli guruhlariga ajratilishi bilan izohlanadi. Jumladan, *antroponimlar* – kishilarning atoqli nomlari [  $\text{Ot}^{\text{A-antro}}$  ]; *toponimlar* – geografik obyektlarning atoqli nomlari [  $\text{Ot}^{\text{A-topo}}$  ]; *teonimlar* – xudolar, ma'budlar, diniy-afsonaviy shaxs va mavjudotlarning nomlari [  $\text{Ot}^{\text{A-teo}}$  ]; *zoonimlar* – laqablar, hayvonlarga qo'yiladigan atoqli nomlar [  $\text{Ot}^{\text{A-zoo}}$  ]; *gemeronimlar* – ommaviy axborot vositalari nomlari [  $\text{Ot}^{\text{A-gemero}}$  ]; *mifonimlar* – xayoliy-to'qima obyektlar nomlari [  $\text{Ot}^{\text{A-mifo}}$  ] kabilar.

Ma'lumki onomastik birliklar ichida antroponim – ismlar alohida ajralib turadi. Ular shaxsiyatning o'ziga xosligi va individual identifikati bo'lib, insonni jamiyatga bog'lovchi muhim ko'prik va millatini ifodalovchi belgidir. Masalan, erkak ismlarida birinchi komponent sifatida *Muhammad*, *Abdu* kabi elementlar, ikkinchi

komponent sifatida *din, bek, jon, boy* kabi qo‘shimchalar uchraydi. Ayol ismlarida esa birinchi komponent sifatida *gul, zulf, oy, dil* so‘zlari, ikkinchi komponent sifatida *bonu, sanam, niso, xon* qo‘shimchalari keng tarqalgan:

*Muhammadaziz, Muhammadamin, Muhammadyusuf, Muhammadsodiq, Muhammadshukur, Muhammadali* kabi ismlar [  $\text{Ot}_{\text{Muhammad}+}^{\text{A-antro}}$  ]; *Abdusamad, Abdulaziz, Abdurashid, Abdurauf, Abdujalil, Abdukarim, Abdumo‘min, Abdushukur, Abdumajid* kabi ismlar [  $\text{Ot}_{\text{Abdu}+}^{\text{A-antro}}$  ]; *Alibek, Nurlibek, Ulug‘bek, Oybek, Norbek, Elbek, Durbek, Tolibek, Risqbek, Jo‘rabek* kabi ismlar [  $\text{Ot}_{+\text{bek}}^{\text{A-antro}}$  ]; *Gulsanam, Gulchehra, Gulhayo, Gulbahor, Gulnoza, Gulmira, Gulida, Gulzira, Gulzoda, Gulshan, Guljamol* kabi ismlar [  $\text{Ot}_{\text{gul}+}^{\text{A-antro}}$  ]; *Mehriniso, Zebiniso, Oyniso, Shahriniso, Xayriniso, Baxtiniso, Ulniso, Matniso* kabi ismlar [  $\text{Ot}_{+\text{niso}}^{\text{A-antro}}$  ] milliy modelida ifodalanadi.

Insonlarning atoqli oti tarkibida hayvon nomlari ham ishlatiladi va bu ko‘pincha ramziy ma‘noga ega bo‘ladi: *Shermuhammad, Arslonbek, Po‘latbulbul* kabi ismlar [  $\text{Ot}_{\text{zoo}+}^{\text{A-antro}}$  ] yoki [  $\text{Ot}_{+\text{zoo}}^{\text{A-antro}}$  ] modellari orqali ifoda etiladi. Toponimlarda ham [  $\text{Ot}_{+\text{obod}}^{\text{A-topo}}$  ] modeliga mansub bo‘lgan *Yashnobod, Mirobod, Xalqobod, Mirzobod, Dehqobod* kabi ko‘plab joy nomlari uchraydi. Shu bilan birga, ikkinchi qismi atoqli ot bo‘lgan *Buyuk Britaniya, Janubiy Koreya, Shimoliy Amerika, Ko‘hna Urganch, Yangi Choshtepa* kabi joy nomlari [  $\text{Ot}_{\text{t}\sim\text{A}}^{\text{A-topo}}$  ] modeliga umumlashtiriladi.

Ajdodlarimiz azaldan shaxs sifatlarining birlik sifatida ifodalanishiga alohida e‘tibor qaratganlar. Ular farzandining yaxshi yashashi va o‘zidagi qobiliyatlarni to‘liq shakllantira olishini tilab, yaxshi ism tanlashga intilganlar. Masalan, *Qobil, Iqbol, Solih, Soliha, Siddiq, Mo‘min* kabi. Yana shunday ismlar borki, “Yaxshi niyat – yorti mol” maqoliga ishonch, ko‘ngildagi orzu-umid va ma‘lum bir maqsad bilan qo‘yiladi. Masalan, *To‘xtasin, Mustahkam, Ulbo‘lsin, O‘lmas, O‘lmasoy, Turg‘un, Anora, Nortoy, Norposhsha* kabi. Birinchi guruhdagi ismlar farzandga bo‘lgan yaxshi tilak<sup>52</sup> sifatida tilak kategoriyasi [  $\text{Ot}_{\text{istak}}^{\text{A-antro}}$  ]; ikkinchi guruh esa o‘z orzusiga yetishish niyati va maqsadni anglatgan holda niyat kategoriyasi [  $\text{Ot}_{\text{niyat}}^{\text{A-antro}}$  ] milliy modeliga kiradi. Bu kabi konseptual modellar, nafaqat, o‘zbek ismlarida, balki boshqa xalqlarga mansub ismlarda ham tarqalgan. Nemis, ingliz, fransuz kabi yevropa xalqlari o‘ziga xos shakl va mazmunda ifodalashsa, qozoq, qoraqalpoq, qirg‘iz kabi turkiy xalqlarda o‘zbek ismlariga o‘xshashlik ko‘p uchraydi. Bu xalqlar madaniyatining mushtarakligi bilan bog‘liq.

O‘zbek tilshunosligida toponimik qoliplar ham katta qatlamga ega. Jumladan, nekronim joylashgan hudud nomlari, o‘sha hududda yashagan aziz-avliyolar ismlari, rivoyat va afsonalar bilan bog‘liq nomlarning tranonimizatsiyasi kuzatiladi. Bunday hollarda hudud nomi bilan bog‘liq nekronimlar [  $\text{Ot}_{\text{topo}}^{\text{A-nekro}}$  ]; aziz-avliyolar nomi bilan bog‘liq nekronimlar esa [  $\text{Ot}_{\text{antro}}^{\text{A-nekro}}$  ] modeliga umumlashtiriladi.

Dissertatsiyada osmon jismlarining atoqli otlarida tranonimizatsiya hodisasining kuzatilishi modellar orqali asoslangan. Jumladan, osmon jismining

<sup>52</sup> O‘zbek tilining izohli lug‘ati. II-III jildlar, – Toshkent: G‘afur G‘ulom, 2023. – B. 556.

o‘simlik nomiga [  $Ot_{kosmo}^{A-fito}$  ]: *Sunbula* (*burj nomi*) kabi; hayvonlarning nomi osmon jismi nomiga [  $Ot_{zoo}^{A-kosmo}$  ]: *Asad*, *Qisqichbaqa*, *Katta ayiq*, *Kichik ayiq* kabi; osmon jismining nomi insonlar ismiga [  $Ot_{kosmo}^{A-antro}$  ]: *Bahrom* (Mars), *Nohid* (Venera), *Shams* (Quyosh) kabi; afsona va miflar nomi osmon jismining nomiga ko‘chishi [  $Ot_{mifo}^{A-kosmo}$  ]: *Temir qoziq*, *Yetti og‘ayni*, *Egizaklar* kabi misollar bilan ifodalangan. Shu tariqa ular yangi invariant sifatida alohida modellarda berilgan.

Ma‘lumki, transnimizatsiya hodisasi ergonimlarga ham xos. O‘zbek tilshunosligida ergonimlar M.Saparniyazova tadqiqotining obyekti bo‘lgan<sup>53</sup>. U ergonimlarni modellashtirishning bir qator tendensiyalari, jumladan, mahalliy, o‘zga madaniy, trans-hududiy modellar haqida mulohaza yuritadi, biroq ergonimlarni milliy modellashtirish masalasiga batafsil to‘xtalmaydi. Mazkur dissertatsiyada esa savdo, ishlab chiqarish va xizmat ko‘rsatish obyektining nomi antroponim, toponim, kosmonim va boshqa atoqli otlardan hosil bo‘lishi transpozitsion modellar orqali tadqiq etiladi. Masalan, “*Siyovush trans omad*” MChJ, “*Zevs*” mashina ta‘mirlash shaxobchasi uchun [  $Ot_{mifo}^{A-ergo-antro}$  ] milliy modeli tavsiya etilgan.

“**Otning grammatik paradigmalarini modellashtirish tamoyillari**” deb nomlangan uchinchi bobda ot so‘z turkumiga mansub so‘z shaklining nutq zanjiridagi tarqalishi tahlil qilinib, otning gap strukturasi modellashtirishdagi roli ochib beriladi. Egalik, kelishik va son kategoriyalari milliy modellar orqali ifodalanadi. Shu bilan birga, grammatik ko‘rsatkichlar, so‘z birikmasi hamda gapning eng kichik primitiv modeli – gap bo‘laklari konstruksiyalari ot turkumi misolida chuqur tadqiq etiladi.

Bobning birinchi fasli “**Otning grammatik kategoriyalari modellari**” deb nomlangan. Otlarda son kategoriyasining bir qator shakllarga egaligi sababli morfologik yo‘l bilan hosil qilingan ko‘plik shaklidagi otlarni modellashtirishda affiks-modellarni qo‘llash maqsadga muvofiq. **Affiks-model** – o‘zbek tili morfologiyasida bir so‘zni boshqa so‘zga bog‘lash vazifasini bajaruvchi affiks (qo‘shimcha)ning o‘zgarish shaklda modelga ko‘chishidir. Masalan, o‘zbek tilida [ **-lar** ], ingliz tilida [ **-s** ], [ **-es** ] kabi affikslar affiks-model sifatida qaraladi va ular birlik shaklidagi ot modelining koeffitsiyentida aks etadi. Natijada morfologik usul bilan yasalgan ko‘plik shakldagi otning xalqaro modellari [ **N<sub>s</sub>** ], [ **N<sub>es</sub>** ], milliy modeli [ **Ot<sub>lar</sub>** ] ko‘rinishida ifodalanadi.

Dissertatsiyada otning son kategoriyasi milliy modellarining lingvostatistik tahlili asosida o‘zbek tilida 1 ta; ingliz tilida 13 ta; rus tilida esa 25 ta morfologik son kategoriyasi modellarining mavjudligi aniqlangan hamda o‘zbek tilida noto‘g‘ri ko‘plik shaklining mavjud emasligi asoslangan. Xususan, *hol-ahvol*, *faqir-fuqaro*, *valad-avlod*, *taraf-atrof*, *haq-huquq*, *xalq-xaloyiq*, *shayx-mashoyix*, *nabiy-anbiyo*, *she‘r-ash‘or*, *tolib-talaba*, *shoir-shuaro*, *kabir-akobir*, *xulq-axloq* kabi o‘zlashmalar birlikdagi ot modeli tarkibiga kiritilgan.

Dissertatsiyada *xalq*, *xaloyiq*, *lashkar*, *armiya*, *olomon*, *poda*, *uyur*, *suruv* kabi jamlovchi otlar [ **Ot<sup>l</sup>** ]; *un*, *yog‘*, *tuz*, *bulut*, *yomg‘ir*, *suv* kabi donalab sanalmaydigan

<sup>53</sup> Saparniyazova M. O‘zbek tili ergonimlarining struktur-semantik, lingvomadaniy va pragmatik tadqiqi: Filol. fan. d-ri. ...diss. avtoref. – Toshkent, 2023. – 240 b.

aniq otlar [  $\text{Ot}_{\text{-lar}}^{\text{a-jk}}$  ]; atoqli otga qo‘shilgan [ **-lar** ] affiksining ko‘plik ma’nosini ifodalashi [  $\text{Ot}_{\text{-lar}}^{\text{A-jk}}$  ]; nutq situatsiyasiga ko‘ra jamlash, umumlashtirish ma’nolarini ifodalovchi aniq otlar [  $\text{Ot}^{\text{a-P|jk}}$  ] modelida ifoda etilib, jamlik kategoriyasi modellari sifatida keltirilgan. Bundan tashqari, *sevinch, ko‘ngil, havo, jannat, hasrat* kabi mavhum otlarga; *yurak, bosh, til* kabi yakka predmetni hamda *ko‘z, quloq, oyoq, etik, tufli* kabi juft predmetni bildiruvchi aniq otlarga [ **-lar** ] affiksining qo‘shilishi orqali grammatik darajalanish hosil qilingan va bu kabi uslubiy ma’no ifodalovchi mavhum otlar [  $\text{Ot}_{\text{-lar}}^{\text{m-dk}}$  ]; aniq otlar [  $\text{Ot}_{\text{-lar}}^{\text{a-dk}}$  ] modeliga jamlangan.

Dissertatsiyada ko‘plik shaklidagi otlarning leksik-semantik va aralash usullar bilan hosil qilinishi leksik hamda affiks-modellar munosabatida ifodalanadi. Jumladan, *ko‘p odam//ko‘p odamlar* kabilar [  $\text{R}^{\text{m}} \rightarrow \text{Ot}_{\text{-lar}}$  ]; *barcha odam//barcha odamlar* kabilar [  $\text{O}^{\text{be}} \rightarrow \text{Ot}_{\text{-lar}}$  ]; *qancha-qancha odam//qancha-qancha odamlar* kabilar [  $\text{O}_{2x}^{\text{s}} \rightarrow \text{Ot}_{\text{-lar}}$  ]; *katta-katta uy//katta-katta uylar* kabilar [  $\text{Sf}_{2x} \rightarrow \text{Ot}_{\text{-lar}}$  ]; *qop-qop bug‘doy//qop-qop bug‘doylar* kabilar [  $\text{Ot}_{2x} \rightarrow \text{Ot}_{\text{-lar}}$  ] formulalarida ko‘rsatiladi. Ushbu modellar boshqa pozitsiyada sintaktik konstruksiyalar, xususan, so‘z birikmasi modelining qurilish materiali ekanligi ta’kidlanadi.

Bundan tashqari, egalik affiksini olgan so‘zning gapda qaratqich kelishigidagi ot bilan grammatik aloqaga kirishib, shaxs va sonda moslashishi hamda kishilik olmoshi va otning shunday moslashuvi natijasida moslashuv munosabatli so‘z birikmasini hosil qilishi alohida ta’kidlanadi. Kishilik olmoshi va egalik affiksi moslashuvining [  $\text{O}^{\text{sh1.2.3+qk}} \rightarrow \text{Ot}^{\text{1.2.3sk+ek}}$  ] milliy modeli ingliz tilidagi *egalik olmosh-sifatlarining* modeliga solishtiriladi.

Uchinchi bobning ikkinchi fasli “**Otlarning tobelik munosabati modellari**” deb nomlangan. Ushbu faslda otning so‘z birikmasidagi mavqeyi modellar vositasida ko‘rsatilib, turli misollar bilan asoslangan.

Ma’lumki, so‘z birikmasi modellari tobe va hokim qismlar munosabati hamda ularning muayyan turkumga mansubligi kabi shakllarga ega. Hatto, biriktiruvchi elementlar va turli grammatik ko‘rsatkichlar ham model shaklida muhrlangan. Turkiy tillar, xususan, o‘zbek tilida tobe va hokim bo‘lakning o‘rni qat’iy: tobe so‘z hokim so‘zdan oldin joylashadi. Birikma komponentlarining sintaktik aloqasini ko‘rsatuvchi tobe so‘z [ **T** ], hokim so‘z [ **H** ] shaklida, ularning o‘zgarma pozitsiyasi esa [ **T** → **H** ] milliy modelida ifodalanadi. Bu o‘zbek tilining leksik zaxirasidagi so‘z birikmalarining umumiy modelidir. Masalan, *uyimizning tomi, akamning ishxonasi, ko‘chaning boshi* kabi so‘z birikmalari uchun [  $\text{Ot}^{\text{qk}} \rightarrow \text{Ot}^{\text{ek}}$  ] modeli invariant hisoblansa, boshqa pozitsiyada [ **Sf** → **Ot** ] shaklidagi modellar uchun [ **T** → **H** ] ham umumiylikni ifodalaydi. Demak, so‘z birikmasi komponentlarining o‘rni o‘zgarma bo‘lib, ularning leksemalar bilan to‘ldirilishi o‘zgaruvchanlikni taqozo etadi. Misol uchun, *onamlarning aytganlari, bolalarning o‘qiyotgani* kabi so‘z birikmalari modeli [  $\text{TOt}^{\text{qk}} \rightarrow \text{HSd}^{\text{ek}}$  ] yoki [  $\text{TOt}_{\text{-ning}} \rightarrow \text{HSd}_{\text{-i}}$  ] ko‘rinishida bo‘lib, ular hokim so‘z sifatdosh, tobe so‘z ot bilan ifodalangan har qanday moslashuv munosabatli so‘z birikmasining milliy modeli hisoblanadi.

O‘zbek tilida *Navoiy kutubxonasi, Bobur bog‘i, Toshkent shahri, iyul oyi, o‘zbek xalqi, kuz fasli, vatan tuyg‘usi, mehnat daftarchasi* kabi birikmalar

mazmunan atalganlik va umumdan ajralganlik ma'nosini ifodalashi bilan birga, muayyan jinsdagi predmetning turi asosida ham birlashtiriladi. S.Nazarova bu kabi birikmalarni [ **Ob.k~Oe.k** ] = **SB** lisoniy-sintaktik qolipida ifodalaydi<sup>54</sup>. Shu tariqa u tur belgisi – jins tuzilishidagi so'z birikmasini qaratqich-qaralmish tuzilishidagi so'z birikmasidan ajratib ko'rsatadi. Dissertatsiyada *Navoiy kutubxonasi, Bobur bog'i, Toshkent shahri* kabi atoqli ot (tur) – turdosh ot (jins) tuzilmasidagi birikmalar [ **Ot<sup>A</sup> ~ Ot<sup>t-ek</sup>** ]; *iyul oyi, o'zbek xalqi, kuz fasli, ichimlik suvi, vatan tuyg'usi, mehnat daftarchasi* kabi turdosh ot (tur) – turdosh ot (jins) tuzilmasidagi birikmalar [ **Ot<sup>t</sup> ~ Ot<sup>t-ek</sup>** ] modeliga umumlashgan. Bu kabi birikmalarda tobelik munosabati uzilib, atalganlik va mo'tadillashish (ta'kid bizniki – Sh.Z) munosabati yetakchilik qiladi.

Bitishuv munosabatli so'z birikmasi ham turli leksemalar bilan ifodalanadi. Jumladan, *yangi to'n, chiroyli gul* [ **TSf → HOt** ]; *o'sha bog', shu kishi* [ **TO → HOt** ]; *do'stona munosabat, sharqona ohang* [ **TR → HOt** ]; *to'rtinchi fasl, beshinchi maktab* [ **TR → HOt** ]; *pishgan gilos, singan umid* [ **TSd → HOt** ] modeliga ega.

O'zbek tilida so'z kontekstdagi pozitsiyasiga qarab turli mohiyatni anglatishi kuzatiladi. Masalan, *mis qozon, yog'och qoshiq, sopol kosa, oltin soat* kabi birikmalar dissertatsiyada [ **TSf<sup>P</sup> → HOt** ] modeli bilan ifodalangan. Bu yerda, [ **P** ] tobe qismdagi so'zning o'z doirasidan chiqib, matndagi sintaktik-semantik pozitsiyasini ko'rsatuvchi pozitsion model sifatida talqin qilinadi. **Pozitsion model** – ma'lum bir so'z turkumiga mansub so'zning matn kontekstidan kelib chiqib, boshqa bir so'z turkumi sifatida ishlatilishini ifodalovchi modeldir.

S.Nazarova muayyan modda – ashyodan yasalgan predmet ma'nosidagi birikmalarni [ **Om – a~On – b** ] = **SB** lisoniy-sintaktik qolipida ifodalashni taklif etadi<sup>55</sup>. Bizningcha, bu kabi birikmalarning komponentlarida tobelanish munosabati saqlangani uchun mo'tadillashuvni ifodalovchi [ **~** ] belgisi o'rniga [ **→** ] tobelanish modelini qo'llash maqsadga muvofiq.

Shaxsning tavsifiy belgisi sifatida yuzaga chiqadigan *professor Salimov, mayor Rustamov, qo'shni kampir, tilshunos olim, tikuvchi qiz, sinfdosh yigit* kabi izohlovchi-izohlanmish munosabatli birikmalarni S.Nazarova shaxsning biror belgisiga ko'ra tasnifi deb ataydi va ularni [ **Osh~Osh** ] = **SB** lisoniy-sintaktik qolipiga umumlashtiradi<sup>56</sup>. Shu asosda dissertatsiyada *professor Salimov, mayor Rustamov* kabi turdosh ot (izohlovchi) – atoqli ot (izohlanmish) tuzilmasidagi birikmalar [ **Ot<sup>t</sup><sub>sh?</sub>~Ot<sup>A</sup><sub>sh?</sub>** ]; *qo'shni kampir, tilshunos olim, tikuvchi qiz, sinfdosh yigit, uchuvchi ayol* kabi turdosh ot (izohlovchi) – turdosh ot (izohlanmish) tuzilmasidagi birikmalar [ **Ot<sup>t</sup><sub>sh?</sub>~Ot<sup>t</sup><sub>sh?</sub>** ] modeliga umumlashtirilgan.

Bobning so'nggi – “**Otning kompozitsion milliy modellari**” deb nomlanuvchi faslida otning gap tarkibidagi vazifalari – gap bo'laklari sifatida konstruktiv hosila tarzida namoyon bo'lishi tahlil qilinadi va ularning milliy modellari haqida fikr yuritiladi. Shuningdek, ega uchun [ **E** ], kesim uchun [ **K** ],

<sup>54</sup> Назарова С. Изохловчили бирикмалар.//Айюб Ғулом ва ўзбек тилшунослиги. – Тошкент, 2004. – Б. 96–100.

<sup>55</sup> Назарова С. Изохловчили бирикмалар.//Айюб Ғулом ва ўзбек тилшунослиги. – Тошкент, 2004. – Б. 96–100

<sup>56</sup> Назарова С. Изохловчили бирикмалар.//Айюб Ғулом ва ўзбек тилшунослиги. – Тошкент, 2004. – Б. 96–100.

to'ldiruvchi uchun [ T ], aniqlovchi uchun [ A ], hol uchun [ H ] kabi belgilanishlar invariant milliy model sifatida taklif etiladi.

Gapda bosh bo'laklar (ega va kesim)ning munosabati minimal gap sanalib, formal mantiq qoidalariga ko'ra bunday gaplar konstruksiyasida ega va kesim modeli ishtirok etadi. Masalan: *Men yozyapman. U o'qidi.* Bu gaplarning egasi olmosh bilan ifodalangan bo'lib, [  $E_O \rightarrow K_F$  ] modeliga ega. Agar gapning egasi (subyekt) otga mansub so'z bilan ifodalansa, ularning modeli [  $E_{Ot} \rightarrow K_F$  ] ko'rinishida bo'ladi. Masalan: *Salima yozyapti. Karim o'qiyapti* kabi.

Gapning ikkinchi darajali bo'laklar bilan kengayishi turlicha ko'rinishda namoyon bo'ladi. Masalan, 1. *Biz universitetga keldik.* 2. *U ko'chada yuribdi* gaplarida hol kengaytiruvchi vazifasini bajarmoqda. Gaplarni tashkil etuvchi komponentlarning qaysi turkumga mansubligi, sintaktik birliklarning morfologik birliklar bilan munosabati [  $E_O + H_{Ot} \rightarrow K_F$  ] modelida aks etadi. Shu tariqa gap konstruksiyalarining eng sodda (primitiv) modeli ma'lum so'z turkumiga mansub gap bo'laklari modeli ekanligi oydinlashadi.

Ega har doim kesimga bog'lanib keladi. Masalan, 1. *Mashina yurdi.* 2. *Stanok ishladi.* Ushbu gaplar [  $E_{Ot} \rightarrow K_F$  ] qolipiga ega. Ega bosh kelishikdagi otdan tashqari, shu kelishikda turgan otlashgan so'zlar bilan ham ifodalanishi mumkin. Masalan, 1. *Qimirlagan qir oshar.* 2. *Suvning shildir-shildiri eshitildi.*

Birinchi gapda otlashgan sifatdosh modeli [  $E_{Sd} \rightarrow H_{Ot} \rightarrow K_{Hn}$  ];

Ikkinchi gapda otlashgan taqlid so'z modeli [  $A_{Ot} \rightarrow E_{Ts} \rightarrow K_F$  ];

Ma'lumki, to'ldiruvchi gap qurilishida kesim bilan sintagmatik munosabatga kirishib, u talab etgan shaklda keladi. Masalan, 1. *Ra'no Salimadan chiroyli.* 2. *Kecha Salimani ko'rdim.* Birinchi gapda vositali to'ldiruvchi [  $E_{Ot} + T_{Ot} \rightarrow K_{Sf}$  ] modeliga, ikkinchi gapda vositasiz to'ldiruvchi [  $H_R + T_{Ot} \rightarrow K_F$  ] modeliga ega.

O'zbek tilshunosligida aniqlovchi [ A ] milliy modelini qo'llash maqsadga muvofiq. Masalan, *Samarqand – chiroyli shahar.* Bu gapda ot-kesim *shahar* so'zi bo'lsa, uning belgi valentligi aniqlovchi vazifasida voqelangan *chiroyli* so'zidir. Gapning modeli [  $E_{Ot} + A_{Sf} \rightarrow K_{Ot}$  ] ko'rinishida bo'ladi. U kesimning bo'sh o'rnini to'ldiruvchi bo'laklarning belgisini bildirib, sifatlovchi-sifatlanmish hamda qaratqich-qaralmish munosabatini yuzaga keltiradi. Masalan, 1. *Ochil buva o'tkir, qora ko'zli, serqosh, chiroyli yigit bo'lgan.* Gapda sifatlovchi-sifatlanmish munosabati berilgan bo'lib, uning tarkibidan [  $E_{Ot} + A_{Sf}^4 \rightarrow K_{Ot}$  ] milliy modelida beriladi. So'z birikmasi tahlilida: to'rtta bitishuv munosabatli [  $A_{Sf}^4 \rightarrow K_{Ot}$  ] so'z birikmasi hamda bitta ega-kesim moslashuvi – minimal gap [  $E_{Ot} \rightarrow K_{Ot}$  ] ajratiladi.

Ot turkumiga mansub so'z gapning qaysi bo'lagiga tegishli bo'lishidan qat'i nazar holat, payt, sabab, maqsad, miqdor kabi valentliklarga ham ega bo'ladi. Shu jihatdan u kesim bilan sintagmatik munosabatda bo'lib, gapda hol [ H ] (universal model – M) vazifasini bajaradi. Masalan, *Biz universitetga keldik.* Ushbu gapdagi *keldik* so'zida kesim ifodalangan bo'lib, universitetga so'zi o'rin valentligi sifatida voqelangan. Bu kabi gaplarning modeli [  $E_O + H_{Ot} \rightarrow K_F$  ] ko'rinishida bo'ladi.

Gapda holning kesim bilan sintagmatik munosabati boshqaruv munosabatli so'z birikmasi konstruksiyasiga ega. Masalan, *U Samarqanddan kecha keldi.* Ushbu gapda ot bilan ifodalangan o'rin holi ishtirok etgan bo'lib, bu kabi gaplar uchun

[  $E_O + H_{Ot} + H_R \rightarrow K_F$  ] modeli tavsiya qilinadi. Soʻz birikmasi tahlilida: bitta boshqaruv munosabatli [  $H_{Ot} \rightarrow K_F$  ]; bitta bitishuv munosabatli [  $H_R \rightarrow K_F$  ] soʻz birikmasi hamda minimal gap [  $E_O \rightarrow K_F$  ] modeli ishlab chiqiladi.

## XULOSA

1. Olamning lisoniy manzarasini anglashda til birliklarining sistemaviy-struktur ifodasi muhim oʻrin tutadi. Shu bois bugungi kun tilshunosligida olam elementlarini oʻzida aks ettiruvchi tilning ichki strukturasi, qoidalari va ularning real nutqdagi ifodalanish mexanizmlari, xususan, grammatik birliklarni modellashtirish masalalariga keng eʼtibor qaratilmoqda. Grammatik modellashtirish natijasida tildagi strukturaviy birliklar va ularning oʻzaro munosabatlari umumlashtirilib, real borliqdagi elementlarning inson tafakkuridagi konseptual koʻrinishi yaratiladi. Bu jarayonda leksik birliklar, grammatik qurilmalar, semantik tuzilmalar va pragmatik mazmun asosiy omil hisoblanadi.

2. Oʻzbek tili milliy korpusining morfologik analizatorini yaratishda dastlabki bosqich sifatida oʻzbek tilining elektron morfologik lugʻatini yaratish masalasi koʻrsatiladi. Keyingi bosqichda esa barcha qoʻshimchalar funksional belgilariga koʻra guruhlarga ajratilib, ularning oʻzbek tilidagi barcha mumkin boʻlgan mantiqiy bazasi shakllantiriladi. Bu nazariya otlarning leksik-semantik va grammatik paradigmalari modellashtirish zaruratini taqazo etadi.

3. Til birliklarini modellashtirish nutqiy hodisalarni til sistemasida umumlashtirish boʻlib, u umumiylik-xususiylik, invariant-variantlilik, substansiya-aksidensiya, oʻzgarmaslik-oʻzgaruvchanlik, mohiyat-hodisa, imkoniyat-voqelik, sabab-oqibat, toʻplam-tasnif, kod-xabar, vizual-aktuallik, mavhumlik-aniqlik kabi dialektik qonuniyatlar asosida amalga oshiriladi. Olam dialektikasining asosini tashkil etuvchi bu qonuniyatlar til va nutq oppozitsiyasida voqelanadi.

4. Tilning barcha sath birliklari maʼlum ichki uzvlarning oʻzaro munosabatidan tashkil topgan umumiylik sanaladi. Oʻz navbatida, quyi sath birligi bir daraja yuqori sath birligining konstruktiv materialidir. Shu maʼnoda, sintaktik konstruksiyalarni eng yuqori darajali umumlashma sifatida eʼtirof etish lozim boʻladi.

5. Lingvistik obyektning belgilari modellashtirish uchun eng muhim va modellashtirish jarayonida eʼtibor qaratilishi muhim boʻlmagan belgilarga ajratiladi va eng muhim belgilar asosida uning qurilmasi yaratiladi. Bu modellashtirishning empirik tamoyilga asoslanganligini koʻrsatadi.

6. Til birliklari har bir til egasining ongida turli hodisalarda muhurlangan. Bu jarayonda til egalarining saviyasi, dunyoqarashi, bilimi, ijtimoiy kelib chiqishi, yoshi, jinsi hamda milliy-madaniy xususiyatlari ham muhim ahamiyat kasb etadi. Shu maʼnoda sezgi aʼzolarimizga berilgan “ayni bir xil” hodisalar ham har bir til egasining milliy-madaniy xususiyatlariga koʻra turli modellarga ega boʻladi. Bu esa har bir milliy til oʻzining milliy qoliplariga ega boʻlishi lozimligini tasdiqlaydi.

7. Soʻzlarni turkumlarga ajratish uzoq tarixga ega. Bunda bevosita kuzatishda berilmagan tashqi olamdagi narsa va hodisalarni ifodalovchi tushunchalarni keng maʼnoli kategoriyada belgilash, morfologik kategoriyalarning mavjudligi, sintaktik qurilmadagi pozitsiyasi va boshqa turkumdagi soʻzlar bilan moslashishi kabi

xususiyatlariga e'tibor qaratiladi. Shu nuqtayi nazardan so'z turkumlari olam dialektikasining eng yirik modeli hisoblanadi.

8. O'zbek tilshunosligida til birliklari modellarining lingvostatistik tahlili lingvistik ta'minot uchun aniq bitta yoki cheklangan modellarni emas, til birliklarini turli aspektlarda o'rganuvchi modellar zaxirasini tavsiya qiladi. O'zbek tili milliy korpusining avtomatik analizatorlari birlamchi modellarni tanlab oladi.

9. Atoqli otlarga mohiyat sifatida model deb qaraladi. Ular "bevosita kuzatishda berilgan" narsa-hodisani nomuhim belgilardan soqit qilish, eng muhim belgilarni aniqlash, solishtirish va umumlashtirish natijasida yaratiladi. Shuningdek, millat madaniyatining asosiy konseptlarini namoyon etishda hamda xalqlar madaniyatining mushtarakligini aks ettirishda o'ziga xos ahamiyat kasb etadi.

10. Otning gapdagi vazifasini ko'rsatuvchi kompozitsion modellar morfologik modellar zanjirining sintaktik strukturada terilishidir. Bunda ot birliklari o'zining morfologik shakllari: *ko'plik, egalik, kelishik qo'shimchalari* bilan birga ma'lum bir funksiyani bajaradi va gap tuzilmasida muayyan sintaktik pozitsiyani egallaydi.

11. Paradigmalar jamiyat vakillari ongida fikriy modellar sifatida shakllanib, semantik maydon va olamning lingvistik manzarasini tashkil etadi. Ushbu konseptual butunliklar kompyuter dasturlarining lingvistik ta'minotida moddiylashtiriladi. Natijada borliq elementlarining paradigmatic butunligini tashkil etuvchi semantik maydon va olamning lingvistik manzarasi ulkan lingvistik bazaga aylanadi. Bu jarayon o'zbek tili milliy korpusini yaratishning muhim omillaridan biri sanalib, til materialining lingvistik jihatdan boyishini ta'minlaydi hamda sun'iy intellekt tizimlarida tilni chuqur o'rganish va qayta ishlash imkoniyatini kengaytirishi bilan xarakterlanadi.



**SCIENTIFIC COUNCIL PHD.03/04.06.2021.FIL.132.01 AT ON AWARDING  
ACADEMIC DEGREES AT KOKAND STATE UNIVERSITY**

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**ANDIJAN STATE UNIVERSITY**

**ZARMASOV SHAKHBOZ SHAKHRIDDIN UGLI**

**PRINCIPLES OF MODELING PARTS OF SPEECH IN UZBEK LANGUAGE  
(on the example of the noun)**

**10.00.11 – Theory of language. Applied and computational linguistics.**

**ABSTRACT  
of the doctor of philosophy (PhD) dissertation in PHILOLOGY**

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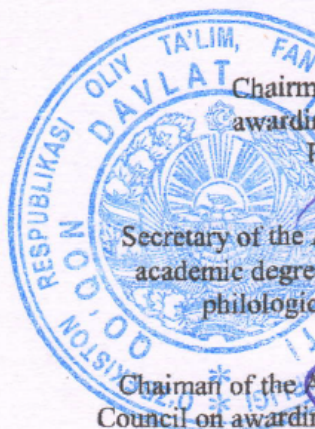
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Dissertation could be reviewed at information-resource center of Kokand State Pedagogical Institute (registration number 14). Address: 150700, Kokand city, Turon str., 23. Tel: (99890) 508-64-42; e-mail: [qdpi\\_arm@umail.uz](mailto:qdpi_arm@umail.uz)

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## INTRODUCTION (philosophy doctor (PhD) dissertation abstract)

**Relevance and demand for the dissertation topic.** In world linguistics, special attention has been paid to the issues of modeling the world of entities, the structure of linguistic phenomena and the creation of national models of grammatical categories. New theories in language research emerged on the basis of modern approaches to the field. As a result, in the second half of the 20th century, formalization began, and from the end of the 20th century and the beginning of the 21st century, linguistic modeling began to serve as a methodological basis for systematic research in linguistics. This ensured the development of such areas of linguistics as pragmatics, sociolinguistics, linguocultural studies, onomastics, cognitology and computer linguistics, and became of practical importance in raising the theory of linguistic modeling to a qualitative level.

In world linguistics, the main issue has become the scientific knowledge of the world, the optimization of human-machine communication, the creation of linguistic support for software materials. This has determined the need to use language units and thought experiments in analyzing them, and to interpret the model as an ideal object. A number of scientific and practical results have been achieved in the field of computer linguistics in language modeling: national language corpora, programs providing morphological, syntactic and semantic analysis of texts have been created, and the NLP (natural language processing) system<sup>57</sup> has been developed.

In Uzbek linguistics, computer programs aimed at solving the problems of integrating the language with modern communication devices, morphoanalyzers for automatic text analysis have been created, significant work has been done on natural language processing and the creation of its linguistic bases. Attention has been paid to the issues of “strengthening the position of the state language in modern information technologies and communications, ensuring its active integration”<sup>58</sup> and creating the linguistic support of the language corpus, studying general principles of modeling and developing linguistic models. However, the development of linguistic foundations of modeling, the creation of linguistic support for the national corpus of Uzbek language based on national models and the establishment of principles for modeling parts of speech of Uzbek language are among the urgent scientific tasks of today.

This dissertation to a certain extent serves the implementation of the tasks defined in the decrees of the President of the Republic of Uzbekistan PD-5850 of October 21, 2019 “On measures to radically increase the prestige and status of Uzbek language as the state language”, PD-6084 of October 20, 2020 “On measures to further develop Uzbek language and improve the language policy in our country”, PD-6097 of October 29, 2020 “On approval of the Concept of Science Development

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<sup>57</sup> Jurafsky D., Martin J.H. *Speech and Language Processing: An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition with Language Models*, 3rd edition. Online manuscript released August 24, 2025. <https://web.stanford.edu/~jurafsky/slp3>.

<sup>58</sup> Decree of the President of the Republic of Uzbekistan Shavkat Mirziyoyev PD-6084 dated October 20, 2020 “On measures for the further development of Uzbek language and improvement of language policy in our country”, // <https://lex.uz/docs/5058351>

until 2030”, PD-6198 of April 1, 2022 “On improving the public administration system for the development of scientific and innovative activities”, PD-6108 dated November 6, 2020 “On measures to develop the spheres of education and science in the new period of development of Uzbekistan”, PD-60 of January 28, 2022 “On the Development Strategy of new Uzbekistan for 2022-2026”, in the Resolution of the Cabinet of Ministers No. 139 of March 11, 2020 “On measures to further improve the effectiveness of fundamental and applied scientific research on Uzbek language and literature”, as well as in other relevant regulatory legal documents.

**Compliance of the research with the priority areas of development of science and technology of the republic.** This study was carried out in accordance with the priority direction of development of science and technology of the republic I. “Social, legal, economic, cultural, spiritual and educational development of an informed society and a democratic state, development of an innovative economy”.

**The degree of study of the problem.** The study of theoretical and methodological problems of linguistic support in world linguistics began in the 1960s: in this period, there was a transition from the “mechanical” stage to the “logical-linguistic” stage<sup>59</sup>. Theoretical foundations of morphological analysis were studied by S.Y.Toldova, T.Sadikov<sup>60</sup>, morphoanalysis features – by D.Rudolf<sup>61</sup>, The practical importance of morphoanalysis – by A.Ermakov<sup>62</sup>, morphological and syntactic text processing model – by I.Nojov<sup>63</sup>. Issues of constructing a morphoanalyzer in Turkic computational linguistics were illuminated in the work of scientists, such as G.Eryigit, E.Adali, A.Dibo, A.Sheymovich, J.Suleymanov, J.Suleymanov, R.A.Gulmullin, R.R.Gataullin<sup>64</sup>.

In world linguistics, language modeling has arisen at the syntactic level. In the 20th century, such scientists as E.Sapir, L.Bloomfield, R.Jacobson, N.Chomsky, A.Losev, Z.Harris, C.Hockett, S.Markus<sup>65</sup>, first used the concept of a “linguistic

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<sup>59</sup> Соколов А.В. Автоматизация библиографического поиска / А.В.Соколов. – М.: Книга, 1981. – 167 с.

<sup>60</sup> Толдова С.Ю., Бонч-Осмоловская А.А. Автоматический морфологический анализ // Фонд знаний «Ломоносов». – М., 2011. [www.lomonosov-fund.ru/enc/ru/encyclopedia:0127430](http://www.lomonosov-fund.ru/enc/ru/encyclopedia:0127430); Садыков Т., Кочконбаева Б. Об оптимизации алгоритма морфологического анализа // Шестая Международная конференция по компьютерной обработке тюркских языков «Turklang-2018». (Труды конференции) – Ташкент, 2018. – 320 с.

<sup>61</sup> Rodolfe D. Computational Linguistic Text Processing: Lexicon, Grammar, Parsing and Anaphora Resolution. Nova Science Publishers, Inc. – New York, 2008. – P. 4–5.

<sup>62</sup> Ермаков А. Морфологический анализатор – основа поисковых систем // <https://www.kv.by/archive/index20041-54301.htm>

<sup>63</sup> Ножов И.М. Морфологическая и синтаксическая обработка текста (модели и программы) сегментации русского предложения. – М.: АКД, 2003. – 152 с.

<sup>64</sup> Eryigit G., Adali E. An affix stripping morphological analyzer for Turkish // Proceedings of IASTED International Conference ARTIFICIAL INTELLIGENCE AND APPLICATIONS. February 16–18, 2004, – Austria. – P. 299–304.; Дыбо А.В., Шеймович А.В. Автоматический морфологический анализ для корпусов хакасского и древнетюркского языков / Научное обозрение саяно-алтая рецензируемый научный журнал, – № 2(08), 2014 (Периодичность – 2 раза в год. серия: Филология. Выпуск 2). – С. 9–31.; Сулейманов Д.Ш., Гильмуллин Р.А., Гатауллин Р.Р. Морфологический анализатор татарского языка на основе двухуровневой модели морфологии // Пятая Международная конференция по компьютерной обработке тюркских языков «TurkLang 2017». – Труды конференции. В 2-х. Т 2. – Казань: Издательство Академии наук Республики Татарстан, 2017. – 327 с.

<sup>65</sup> Sapir E. Language an introduction to the study of speech. – New York, 1921. – 246 p.; Bloomfield L. An introduction to the study of language. – Amsterdam, 1933. – 292 p.; Jakobson R. Fundamentals of Language. – Berlin, – 91 p.; Хомский Н. Синтаксические структуры // Новое в лингвистике. Вып. 2. – М., 1962. – С. 412–527.; Лосев А.Ф. Введение в общую теорию языковых-моделей. – М., 1968. – С. 13–20.; Harris Z. Structural Linguistics. – Chicago, 1960, – 408 p. Hockett Ch. A course in modern linguistics. – New York, 1958. – 648 p.

model". Later, in the scientific works of such scientists as V.A.Vennikov, K.B.Baratoyev, B.G.Glinsky, A.I.Uyumov, I.B.Novik, V.A.Shtoff, Y.A.Zhdanov, E.V.Busalova, F.N.Gurbanov, V.A.Vennikov, Y.F.Kirov, L.N.Murzin, I.I.Revzin<sup>66</sup>, the general essence of the modeling method, the foundations of the model, its functions in scientific knowledge, and classification issues were investigated.

Research on modeling the syntactic level in Uzbek linguistics began in the 1970s and 1980s with the monographic work of A.Nurmanov<sup>67</sup>. In particular, the development of minimal models of simple sentences<sup>68</sup>, the systematic and structural study of complex sentences<sup>69</sup>, structural model of absence-presence features in a sentence<sup>70</sup>, manifestation of the dialectic of the general-particular at the linguistic level<sup>71</sup>, formal, positional and semantic models of word combinations<sup>72</sup>, in addition, units of the morphemic level<sup>73</sup> and the problems of modeling word formation were also studied in monographic terms. However, modeling of morphological units has not been the subject of special studies and is considered one of the complex, problematic issues awaiting solution.

The scientific researches of A.Pulatov, M.Makhmudov, M.Ayimbetov, S.Karimov, S.Rizayev, S.Mukhamedov, G.Dzhumanazarova, A.Babanarov, D.Urinboyeva, A. Norova and I.Kosimova<sup>74</sup> on lexicographic text processing and linguastatistical analysis in Uzbek computational linguistics deserve attention. Later

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<sup>66</sup> Венников В.А. Теория подобия и моделирования. – М., 1986. – 489 с.; Киров Е.Ф. Теоретические проблемы моделирования языка. – Казань, 1989. – 265 с.; Мурзин Л.Н. Лингвистическое моделирование и деривация речевой деятельности // Деривация в речевой деятельности. – Пермь, 1988. – С. 52–62.; Ревзин И.И. Модели языка. – М.: Академии наук, 1962. – 194 с.

<sup>67</sup> Нурмонов А.Н. Проблемы системноисследования синтаксиса узбекского языка. – Ташкент, 1982. – 152 б.

<sup>68</sup> Курбонова М. Ўзбек тилшунослигида формал-функционал йўналиш ва содда гап курилишининг талкини: Филол. фан. д-ри. ...дисс. автореф. – Тошкент, 2001. – 51 б.; Абузалова М. Ўзбек тилида содда гапнинг энг кичик курилиш қолипи ва унинг нутқда воқеалари: Филол. фан. номз. ...дисс. автореф. – Тошкент, 1994. – 19 б.

<sup>69</sup> Сайфуллаева Р.Р. Ҳозирги ўзбек тилида кўшма гапларнинг формал-функционал талкини. – Тошкент: Фан, 1994. – 257 б.

<sup>70</sup> Лутфуллаева Д.Э. Гапнинг семантик-синтактик курилиш қолипи ва пропозитив структураси ўртасидаги муносабат (ўзбек тилидаги йўқлик-мавжудлик белгилари асосида зидланувчи гаплар мисолида). Филол. фан. д-ри. ...дисс. – Тошкент, 2006. – 235 б.

<sup>71</sup> Набиева Д. Ўзбек тилининг турли сатҳларида умумийлик ва хусусийлик диалектикасининг намоён бўлиши. – Тошкент: Шарқ, 2005. – 166 б.

<sup>72</sup> Назарова С. Бирикмаларда сўзнинг эркин боҳланиш омиллари: Филол. фан. номз. ...дисс. автореф. – Тошкент, 1997. – 21 б.

<sup>73</sup> Мирзакулов Т. Ўзбек тили морфемикасининг асосий аспекти ва уларнинг муносабатлари. – Хўжанд, 1992. – 50 б.

<sup>74</sup> Пулатов А.К., Муҳамедова С. Компьютер лингвистикаси. – Тошкент, 2007. – 117 б.; Махмудов М.А., Пиотровская А.А., Садыков Т. Система машинного анализа и синтеза тюркской словоформы // Переработка текста методами инженерной лингвистики. – Минск, 1982.; Айымбетов М.К. Опыт лингвостатистического анализа лексики и морфологии каракалпакского публицистического текста: Автореф. дисс... канд. фил. наук. – Ташкент, 1987.; Каримов С., Қаршиев А., Исроилова Г. Абдулла Қаҳҳор асарлари тилининг луғати. Алфавитли луғат. Частотали луғат. Терс луғат. – Тошкент, 2007. – 434 б.; Ризаев С. Ўзбек тилининг лингвостатистик тадқиқи: Филол. фан. д-ри. ...дисс. автореф. – Тошкент, 2008.; Муҳаммедов С.А. Статистический анализ лексико-морфологической структуры узбекских газетных текстов: Автореф. дисс... канд. фил. наук. – Ташкент, 1980. – 88 б.; Жуманазарова Г.У. Фозил Йўлдош ўғли дostonлари тилининг лингвопоэтикаси: Филол. фан. д-ри. ...дисс. автореф. – Тошкент, 2017. – 50.; Бабанаров А. Разработка принципов построения словарного обеспечения турецко-русского машинного перевода: Автореф. дисс... канд. фил. наук. – Л., 1981. – 17 с.; Ўринбоева Д.Б. Ўзбек фольклори матнларининг лингвостатистик тадқиқи: Филол. фан. номз. ...дисс. – Тошкент, 2010. – 121 б.; Норов А. Компьютер лингвистикаси асослари. – Қарши, 2017. – 136 б.; Қосимова И.А. Ўзбек, рус ва инглиз тилларидаги феъл шакллари синтез ва анализ қилишининг компьютер дастури. – Тошкент, 2005. – 126 б.

the linguistic support of Uzbek-English machine translation<sup>75</sup>, principles of constructing the author's corpus of Uzbek language<sup>76</sup>, also the linguistic base of the language corpus<sup>77</sup>, issues of creating a morphological analyzer of the national language<sup>78</sup>, graphematic analysis of units of Uzbek language<sup>79</sup> and problems of syntactic formatting<sup>80</sup> were studied in a monographic manner. The software aspects of automatic analysis of nouns<sup>81</sup>, also automation of morphological analysis of nouns and adjectives<sup>82</sup> have been covered.

Currently, the theoretical foundations of morphological analysis, its general description, working principles, descriptions of grammatical categories and linguistic models have been studied at Kyoto University (Japan), Australian National University (Australia), Istanbul Technical University (Turkey), Moscow State University and Moscow State Linguistic University (Russia); tasks such as developing models for morphological and syntactic text processing as well as morphological analyzers have been researched at Kharkiv State Pedagogical University (Ukraine) and Baku State University (Azerbaijan)<sup>83</sup>. The authorship corpus of Uzbek language and its linguistic infrastructure are being studied at the National University of Uzbekistan, Tashkent State University of Uzbek Language and Literature, and Tashkent University of Information Technologies (Uzbekistan). In addition, certain scientific and practical studies are also being conducted at Bukhara State University, Karshi State University, and Termez State University.

**The relevance of the dissertation research to the research plans of the higher education institution where the dissertation was carried out.** The dissertation was completed in accordance with the plan of scientific research works of Andijan State University within the framework of the topic “Modern trends in linguistics: problems and tasks”.

**The aim of the research is** to identify the dialectical relationships among existential elements and the principles of national modeling of parts of speech in Uzbek language based on national models of the noun category.

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<sup>75</sup> Abdurahmonova N. Mashina tarjimasining lingvistik ta'minoti. Monografiya, – Toshkent, 2018. – 175 b.; Хамроева Ш. Ўзбек тили муаллифлик корпусини тузишнинг лингвистик асослари: Филол. фан. бўйича фалсафа доктори (PhD)...дисс. – Қарши, 2018. – 250 б.

<sup>76</sup> Хамроева Ш. Ўзбек тили муаллифлик корпусини тузишнинг лингвистик асослари: Филол. фан. бўйича фалсафа доктори (PhD)...дисс. – Қарши, 2018. – 250 б.

<sup>77</sup> Эшмўминов А.А. Ўзбек тили миллий корпусининг синоним сўзлар базаси: Филол. фан. бўйича фалсафа доктори (PhD) ...дисс. – Қарши, 2019. – 140 б.

<sup>78</sup> Хамроева Ш. Ўзбек тили морфологик анализаторининг лингвистик таъминоти. Филол. Фан. д-ри ...дисс. – Тошкент, 2021, – 268 б.

<sup>79</sup> Абжалова М.А. Ўзбек тилидаги матнларни таҳрир ва таҳлил қилувчи дастурнинг лингвистик модуллари (Расмий ва илмий услубдаги матнлар таҳрири дастури учун): Филол. фан. бўйича фалсафа доктори (PhD)...дисс. – Фарғона, 2019. – 164 б.

<sup>80</sup> Qurbonova M., Rahmatilloeva M. O'zbek tilida sintaktik qoliplar va matnning avtomatik tarjimasini. Monografiya. – Toshkent: Ma'rifat, 2023. – 176 b.

<sup>81</sup> Орхун М. Computational analysis of uzbek nouns / Шестая Международная конференция по компьютерной обработке тюркских языков «TurkLang-2018». (Труды конференции) – Ташкент, 2018. – 320 с.

<sup>82</sup> Болтаев Т.Б., Ибрагимов С.И. О проекте программной системы морфологического анализа узбекского языка // <http://buxdu.uz/index.php/uz/>; Болтаев Т.Б., Кузьминов Т.В., Поттосин И.В. О структурном конструировании программ и инструментах его поддержки // Среда программирования: методы и инструменты. – Новосибирск, 1992, – С. 22–37.

<sup>83</sup> Хамроева Ш. Ўзбек тили муаллифлик корпусини тузишнинг лингвистик асослари: Филол. фан. бўйича фалсафа доктори (PhD)...дисс. – Қарши, 2018. – Б. 8.

### **Research objectives:**

To shed more light on the importance of the modeling method in the field of linguistics and computational linguistics by exploring the dialectical relationship between the elements of existence and the theoretical foundations of linguistic models;

to demonstrate the existence of specific national models in each language by developing lexical-semantic, morphological and syntactic national models of nouns;

to develop recommendations on the basic principles of national modeling of morphological level units of Uzbek language, in particular, parts of speech;

to reveal more broadly the functions of the noun class at the lexical-semantic, morphological and syntactic levels through national models;

to create national linguistic models of the noun class for the national corpus of Uzbek language;

to develop compositional national models of units belonging to the noun class by analyzing their position in the structure of word combinations.

**The object of the study** is nouns in Uzbek language.

National linguistic models of lexical-semantic and grammatical paradigms of the noun class are defined as **the subject of the study**.

**Research methods.** Inductive and deductive methods, as well as systems analysis, functional analysis, linguistic statistical analysis, object comparison, and synthesis and analysis methods have been used in the preparation of the dissertation.

### **Scientific novelty of the research:**

the issues related to the dialectical relationships of elements of existence, the existence of national models in various systemic languages and their expressive capabilities, as well as the principles of linguistic models that preserve national forms for the national corpus of Uzbek language, especially, the linguistic-semantic, morphological, and syntactic paradigms of lexical units specific to nouns have been identified based on national modeling;

as a result of extensive national modeling and linguostatistical analysis of the semantic groups of the noun, 37 structural national models have been created, in particular, 8 – according to the countability-uncountability feature. The dialectical relationships between units belonging to the noun class have been substantiated through macrosystem, microsystem, core, transpositional, and structural models;

The age, gender and species characteristics of paradigms in the semantic field of nouns, extensional-intentional, whole-part, functional, synonymy and gradation relations have been modeled nationally as linguistic support, and proper nouns have been modeled linguistically for the national corpus of Uzbek language as a separate system based on the linguocultural principle. The ethnographic and national-cultural characteristics of proper nouns have been proven through transonymization models such as [  $Ot_{Muhammad+}^{A-antro}$  ], [  $Ot_{istak}^{A-antro}$  ], [  $Ot_{niyat}^{A-antro}$  ], [  $Ot_{Abdu+}^{A-antro}$  ], [  $Ot_{+bek}^{A-antro}$  ], [  $Ot_{gul+}^{A-antro}$  ], [  $Ot_{+niso}^{A-antro}$  ]; the relationship of proper nouns in the linguistic view of the world - [  $Ot_{topo}^{A-nekro}$  ], [  $Ot_{antro}^{A-nekro}$  ], [  $Ot_{kosmo}^{A-fito}$  ], [  $Ot_{zoo}^{A-kosmo}$  ], [  $Ot_{antro}^{A-kosmo}$  ], [  $Ot_{mifo}^{A-ergo}$  »antro» ];

the position of noun class units in sentences and word combinations has been analyzed, and national models of word combination types, annotator-annotated relations, and combinations in the species-gender structure have been created, the emergence of a compositional structure indicating the function of a noun in a sentence, based on the mutual adaptation of the categories of belonging, agreement and number, as well as the functional properties of a noun at the lexical-semantic, morphological and syntactic levels based on national models, have been proven.

**The practical results of the study are as follows:**

it is substantiated that the research can be used in such areas of linguistics as pragmatics, sociolinguistics, linguocultural studies, onomastics, cognitology, and computational linguistics, in particular, in deeper research into lexical-semantic and grammatical systems and in the development of the theory of linguistic modeling;

it has been determined that the national models created within the framework of the dissertation will serve as an important source for the linguistic support of digital technological systems, in particular, for the creation of an electronic morphological dictionary of Uzbek language and for the systematic and structural study of Uzbek linguistics.

as a result of scientific research, 37 different national models of the noun class have been developed, as well as considerations have been put forward on the importance of linguistic and cultural principles in the national modeling of paradigms in the semantic field and the linguistic landscape of the world.

**The reliability of the research results** is explained by the clear formulation of the problem, the consistency of the conclusions drawn from the research with its methodology, the relevance of the problem posed in the field, the theoretical basis of the interpretation of linguistic evidence, the resolution of the cases of the research being defended using comparative-theoretical methods, as well as the publication of the results of the scientific work in domestic and foreign scientific journals recommended for publication, in national and international scientific conferences, and the implementation of the conclusions in practice.

**Scientific and practical significance of the research results.**

The scientific significance of the research results is determined by the fact that they serve to form a previously non-existent national approach to linguistic modeling, to study the dialectical relations between the elements of existence in a deeper linguocultural sense, and to enrich Uzbek computer linguistics theoretically.

The practical significance of the research results is explained by the fact that they serve the development of the national corpus of Uzbek language as a linguistic resource, to create a foundation for the linguostatistical description of the language, as well as for its integration into artificial intelligence systems, morphoanalyzers, and automatic translation programs.

**Implementation of research results.** The theoretical proposals, practical recommendations, and conclusions put forward in the study have been applied to the following:

conclusions on the existence of national models in different systematic languages and their expressive possibilities, the principles of linguistic models that

preserve national forms for the national corpus of Uzbek language, in particular, the national modeling of linguistic-semantic, morphological and syntactic paradigms of noun-specific lexical units were used in the framework of the practical project II-4721101717, carried out at the Center for training and advanced studies on the fundamentals of business administration in the state language at TSUULL named after Alisher Navoi in 2022–2023 on the topic “Creation of an interactive electronic platform for service facilities” (Certificate No. 1475 dated October 8, 2024). As a result, the principles of naming trade, production and service objects according to their national-cultural, etymological characteristics and geographical location were developed;

conclusions on the position of noun class units in sentences and word combinations, types of word combinations, the creation of national models of compounds in the annotator-annotated relationship and in the species-genus structure, and the formation of a compositional structure indicating the function of a noun in a sentence based on the mutual adaptation of the categories of possession, agreement, and number, as well as the functional properties of nouns at the lexical-semantic, morphological, and syntactic levels were used in the framework of the practical project conducted at Samarkand branch of Tashkent University of Information Technologies named after Muhammad al-Khwarizmi in 2021–2023 on the topic “Designing a national corpus of Uzbek language and developing a software package”. (Certificate No. 723/01-01 dated November 8, 2024). As a result, the principles of designing a national corpus of Uzbek language, creating linguistic support, in particular, developing linguistic models have been determined.

conclusions on the importance of transonymization models in the semantic field and linguistic landscape of the world, the transonymization of various word classes, in particular, nouns, as a phenomenon that creates emotional processes and spiritual and national-cultural relations between man and the world were used in the preparation of the episode of the social program “What do you say?” on the “Tashkent” TV channel on the topic “*Let’s learn to speak correctly*”, which was broadcast on January 17, 2024 at 6:00 PM (reference number 01-15-114 dated November 4, 2024). As a result, this TV show is enriched with scientific evidence that the creation of national names, which are the basis of the linguistic view of the world, relies on emotional processes between human and the world.

**Approbation of the research results.** The results of the study were presented in the form of reports at 4 scientific and practical conferences, including 2 international and 2 national conferences.

**Publication of the research results.** On the topic of the dissertation, a total of 13 scientific papers were published, including 6 articles published in scientific journals recommended by the Higher Attestation Commission under the Ministry of Higher Education, Science and Innovation of the Republic of Uzbekistan for the publication of the main results of doctoral dissertations, of which 2 were published in foreign journals.

**Structure and volume of the dissertation.** The dissertation consists of an introduction, three chapters, a conclusion, a list of references and an appendix. The volume is 150 pages.

## MAIN CONTENT OF THE DISSERTATION

The **introduction** establishes the relevance and necessity of the dissertation topic, clarifies the level of study of the problem, defines the goals and objectives, object and subject of the research, indicates the compliance of the topic with the priority areas of development of science and technology of the republic, highlights its scientific novelty and practical results, substantiates the reliability, scientific and practical significance of the results obtained, describes the implementation, publication, the structure and scope of the work.

The first chapter of the dissertation is entitled “**Description of researches on modeling in world linguistics**”, it studies the formation and development of the linguistic modeling method, the changes that have occurred, and in particular the model as a product of the intersection of emotional and scientific knowledge.

In the first paragraph of the chapter entitled “**Introduction and study of the modeling method in world linguistics**”, the initial theoretical and methodological foundations of the modeling method, its introduction into linguistics, and its essence are discussed, and scientific research and studies in this area are analyzed.

Scientific knowledge of the universe and modeling of the elements of the universe began with Karl Popper’s theory about three worlds. According to this theory, there is a physical world, intellectual world and ideological world, and from the physical world we move towards the world of ideas: the physical world is given to our senses, and it is reflected in our consciousness as the world of ideas. By generalizing the important features in the world of ideas, the constructive - ideal world – is formed. The constructive world is the manifestation of an object in the form of a model, scheme, drawing, construct, and the substrate as called by A.F.Losev<sup>84</sup>.

American scientist K. Shannon explains the transmission of information about the outside world to humans in the scheme *source → transmitter → chanal → priyomnik (receiving device – our explanation, by Sh.Z.) → recipient of information*<sup>85</sup>. A. Rakhimov interprets it as a model of the communication process<sup>86</sup>. In our opinion, the communication process has a scheme “*source → chanal → communicator → chanal → speech situation + speech message + speech purpose + speech effect ← addressee*”.

There are certain logical regularities in the realization of language units in speech. In particular, formal logic emerged as a result of Aristotle's teachings. The German philosopher Hegel laid the foundation for dialectical logic. Later, Leibniz and Gilbert introduced mathematical symbols into the science of logic. By the 19th century, the foundations of symbolic logic were created in the works of the German

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<sup>84</sup> Лосев А.Ф. Введение в общую теорию языковых моделей. – М.: Наука, 1968. – С. 16.

<sup>85</sup> Эко У. Отсутствующая структура. Введение в семиологию. – М.: Петрополис, 1998. – С. 45.

<sup>86</sup> Rakhimov A. Kompyuter lingvistikasi asoslari. – Toshkent: Akademnashr, 2011. – B. 18.

scientist G.Frege, the English scientist J.Boole, and the Russian scientist V.Poretsky<sup>87</sup>. Thus, logic, grammar, semiotics, and algorithm began to serve as the foundation for the application of modeling methods to linguistics.

In science, predictions based on modeling methods are based on the idea that the model has a theoretical basis. Model (*fr.modele* < *lot.modulus* – *measure, standard, copy, template*) a copy of something, either exactly the same or diminished, enlarged<sup>88</sup>, it, accumulating theoretical knowledge about the studied object, provides for the creation of a derivative object based on this knowledge.

Models have initially been used in practical fields, and later also entered the social sphere of science. Since the 1950s, the terms “*machine translation*” and “*machine linguistics*” have been used in linguistics<sup>89</sup>. Computational linguistics was formed on the basis of the views of the American scientist N.Chomsky on formal grammar (formal grammatical theory)<sup>90</sup>. Thus, in the 20th century the concept of linguistic model in linguistics is first used by scientists such as E.Sepir, L.Bloomfield, R.Jacobson, Z.Harris, C.Hockett, S.Marcus, A.Losev, N.Chomsky<sup>91</sup>.

In world linguistics, the issue of modeling linguistic concepts has come to the fore at the syntactic level. In particular, it has been emphasized that the grammatical theory of formal languages, based on Sapir's hypotheses about symbolization<sup>92</sup>, works on parts of speech, clauses, and sentence constructions<sup>93</sup>, the idea of modeling sentence structure, put forward by the American scientist Charles Freese in the 1950s, is that a sentence is considered a chain of words belonging to certain parts of speech, and the analysis is based on morphology<sup>94</sup>. The concept of verbocentrism, put forward by the French linguist Lucien Tenier, states that the simplest (primitive) model of sentence constructions is a model of sentence fragments belonging to a certain parts of speech. E.I. Shutova considers the standard meaning common to various real manifestations of the syntactic model as a syntactic invariant, and emphasizes that this invariant is manifested on the basis of *lexical-semantic, lexical-morphological, morphological and compositional variants*<sup>95</sup>.

A model – a language unit, and its occurrence in speech is considered a speech unit. As a result of generalizing speech phenomena based on the most important and similar features, a model is formed, which in linguistics is expressed with such terms as an invariant, substance, ore, pattern, drawing, scheme, construct, device, formula, etc. This chapter covers not only the theoretical aspects of the modeling method, but also its application to the practical process.

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<sup>87</sup> Пўлатов А.К., Мухамедова С. Компьютер лингвистикаси. – Тошкент, 2007. – Б. 10.

<sup>88</sup> Философский словарь. – Москва: Изд-во полит. Лит-ры, 1991. – С. 267.

<sup>89</sup> Grishman R. Computational linguistics. Cambridge University Press, 1994. – P. 4.

<sup>90</sup> Гладкий А.В., Мельчук И.А. Элементы математической лингвистики. – Москва: Наука, 1969. – С.7.

<sup>91</sup> Sepir E. Language an introduction to the study of speech. – New York, 1921. – 246 p.; Blumfeld L. An introduction to the study of language. – Amsterdam, 1983. – 292 p.; Yakobson R. Fundamentals of Language. – Berlin, – 91 p.; Хомский Н. Синтаксические структуры // Новое в лингвистике. Вып. 2. – М., 1962. – С. 412–527.; Лосев А.Ф. Введение в общую теорию языковых-моделей. – М., 1968. – С. 13–20.; Harris Z. Structural Linguistics. – Chicago, 1960, – 408 p.; Hockett Ch. A course in modern linguistics. – New York, 1958. – 648 p.

<sup>92</sup> [https://studopedia.ru/6\\_11435\\_ponyatie-i-sostav-lingvisticheskogo-obespecheniya.html](https://studopedia.ru/6_11435_ponyatie-i-sostav-lingvisticheskogo-obespecheniya.html)

<sup>93</sup> Rahimov A. Kompyuter lingvistikasi asoslari. – Toshkent: Akademnashr, 2011. – B. 45.

<sup>94</sup> Пўлатов А.К., Мухамедова С. Компьютер лингвистикаси. – Тошкент, 2007. – Б. 32.

<sup>95</sup> Шутова Е.И. Вопросы теории синтаксиса. – Москва: Наука, 1984. – С. 107.

The second paragraph of the chapter is entitled “**Application of the modeling method to Uzbek linguistics**”. This paragraph discusses the fact that the initial works devoted to the study of the modeling method in Uzbek linguistics focused on the issue of modeling the syntactic level of the language. On this basis, scientific reasoning is carried out about intrinsic connection of the dialectical relations leading to the modeling of phonological, morphemic, lexical, and morphological units of the language with the syntactic level, and the opening of path leading to the syntactic level through the modeling of morphological level units.

The problem of modeling morphemic level units in Uzbek linguistics was first put forward in the studies of T.Mirzakulov. Sh.Mirzakulov’s research shows efforts to model the paradigm of word formation<sup>96</sup>. A.Nurmonov, justifying that the building material of a word form is a morpheme, presents a model of a constructed word consisting of the relationship of morphemes in the scheme of *lexical morpheme + auxiliary morpheme*, that is, in the form [  $\mathbf{M}_l + \mathbf{M}_{yord}$  ], and recognizes it as an invariant<sup>97</sup>. D. Nabiyeva interprets the model ( $\mathbf{M}^l + \mathbf{M}^g$ ) of *lexical morpheme + grammatical morpheme* as invariant, and the addition of allomorphs to this model as a variant<sup>98</sup>. In this work, a national model [  $\mathbf{M}^l + \mathbf{M}^g$  ] is presented based on the scheme *lexical morpheme + grammatical morpheme*.

Some literatures promote lexeme-based approaches to defining commonality across language levels. Particularly, L.Bloomfield emphasizes that a word (lexeme) is a construction<sup>99</sup>. The lexeme is considered a reference point – a core model in the modeling process. Thus, the issue of modeling syntactic units, which are considered the highest generalization of language units, is described in the monographic works of linguists, such as R.Sayfullayeva, M.Kurbonova, D.Lutfullayeva, D.Nabiyeva, M.Abuzalova, S.Nazarova<sup>100</sup>. In these works, the terms *structural model, structural scheme, sentence pattern, and sentence model* are used in relation to the construction patterns of a sentence. Such structural schemes are also referred to in Uzbek linguistics with the terms *syntaxema, cognitema, construct, model, and pattern*. In

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<sup>96</sup> Мирзакулов Т. Ўзбек тили морфемикасининг асосий аспекти ва уларнинг муносабатлари. – Хўжанд, 1992. – 50; Мирзакулов Т. Ўзбек тили морфем парадигматикаси ва синтагматикаси масалалари: Филол. фан. д-ри. дисс.... автореф. – Тошкент, 1994. – 82 б.; Мирзакулов Ш. Ўзбек тилида сўз ясалиш маъноси ва парадигмаси: Филол. фан. номз. ...дисс. автореф. – Самарқанд, 1995. – 22 б.

<sup>97</sup> Нурмонов А. Туркий тилларда сўз ва уларни туркумларга ажратиш муаммолари // Танланган асарлар. 3 жилдлик. 1-жилд. – Тошкент: Академнашр, 2012. – Б. 186.

<sup>98</sup> Набиева Д. Д. Ўзбек тилининг турли сатҳларида умумийлик ва хусусийлик диалектикасининг намоён бўлиши. – Тошкент: Шарқ, 2005. – Б. 18.

<sup>99</sup> Блумфилд Л. Язык. – Москва, 1968. – С. 225.

<sup>100</sup> Сайфуллаева Р.Р. Ҳозирги ўзбек тилида қўшма гапларнинг формал-функционал талқини. – Тошкент: Фан, 1994. – 356 б.; Курбонова М. Ўзбек тилида формал-функционал йўналиш ва содда гап қурилишининг талқини. Филол. фан д-ри. дисс... автореф. – Тошкент, 2001. – 51 б.; Лутфуллаева Д.Э. Гапни семантик-синтактик қурилиш қолипи ва пропозитив структураси ўртасидаги муносабат (ўзбек тилидаги йўқлик-мавжудлик белгилари асосида зидланувчи гаплар мисолида). Филол. фан. д-ри... дисс. автореф. – Тошкент, 2006.; Набиева Д. Ўзбек тилининг турли сатҳларида умумийлик ва хусусийлик диалектикасининг намоён бўлиши. – Тошкент: Шарқ, 2005. – 166 б.; Abuzalova M. O‘zbek tilida sodda gaplarning eng kichik qurilish qolipi va uning nutqda voqelanishi. Filol. fan. nomz... diss. – Toshkent, 1994. – 134 б.; Nazarova S.A. Birikmalarda so‘zning erkin bog‘lanish omillari. Filol. fan. nomz... diss. avtoref. – Toshkent, 1997. – 26 б.

particular, G.Toirova<sup>101</sup> has used the term module, but the concept of module does not fully correspond to the content of the model<sup>102</sup>.

In the dissertation, a generalized national model of the relationship between form and content of the smallest sentences has been presented in the form [P<sup>3</sup>]. This model includes the triad of *proposition + predicate + predicativity*. On the basis of this model, there is a possibility to construct a national model [P<sup>3</sup><sub>ot</sub>] for the noun predicate and a national model [P<sup>3</sup><sub>F</sub>] for the verb predicate. In addition, for the word-sentences, the model [P<sup>2</sup>] based on the scheme *proposition + predicative*, for minimal sentences, the model [Kk<sub>hukm</sub>] were proposed. Here, [Kk ] – is a category of predicate and predicativity.

This paragraph also describes the issues of modeling phraseologisms put forward by Sh.Rakhmatullayev. Research works carried out on Uzbek computational linguistics are analyzed. In particular, responses to research work by N.Abdurakhmonova<sup>103</sup>, Sh.Khamroyeva<sup>104</sup>, M.Abjalova<sup>105</sup> were expressed.

This study does not deny international modeling standards, but focuses on the determination of national modeling principles based on the internal structure of each language, the national and cultural characteristics of its speakers. In particular, the problems of national modeling of Uzbek parts of speech based on the synthesis and analysis methods are highlighted on the example of the noun. As a result of the research, *the principles, such as deductive, inductive, explanatory, logical knowledge, theoretical knowledge, abstraction, idealization, simplification, distributive, linguocultural, economic, empirical, categorical, and syntactic-semantic*, were put forward in the national modeling of parts of speech of Uzbek language.

The second chapter entitled **“Principles of modeling lexical-semantic paradigms of nouns”**, it describes the national modeling of lexical-semantic paradigms of words belonging to the part of speech of noun, the semantic field of the noun and national models of the system of proper nouns in the linguistic landscape of the world. The paradigmatic relationship of lexical units is studied within the framework of the noun.

In the first paragraph of the chapter entitled **“The model of semantic groups of the noun in structural interpretation”** it was **nationally modeled and linguistically analyzed** based on studying the properties of objects in the external world, isolating primary signs, subtracting from additional signs, comparing, contrasting, and generalizing, based on this, **national modeling and linguistic statistical analysis** were carried out.

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<sup>101</sup> Тоирова Г. Лингвистик базани тузишда модуллаштиришнинг аҳамияти. // Наманган давлат университети илмий ахборотномаси. – Наманган, 2021 йил 3-сон, – Б. 377–385.

<sup>102</sup> O‘zbek tilining izohli lug‘ati. – Toshkent: G‘afur G‘ulom, 2023. – B. 215–216.

<sup>103</sup> Abdurahmonova N. O‘zbek tili elektron korpusining kompyuter modellari. Filol. fan. d-ri. ...diss. Avtoref. – Toshkent, 2021. – 30 б.

<sup>104</sup> Хамроева Ш. Ўзбек тили морфологик анализаторининг лингвистик таъминоти: Филол. фан. д-ри. ...дисс. – Тошкент, 2021. – 268 б.

<sup>105</sup> Абжалова М.А. Ўзбек тилидаги матнларни таҳрир ва таҳлил қилувчи дастурнинг лингвистик модуллари: Филол. фан. бўйича фалсафа доктори (PhD)...дисс. – Фарғона, 2019. – 164 б.

It is known that a model divides and organizes objects into certain groups. On this basis, the combination of lexemes into certain classes is also considered modeling. For example, abstract concepts, objects and phenomena given to our senses – *cars, trees, houses, clothes, rivers* – are all models. So, the existence surrounding a person has a modeled appearance, and word groups are the largest model of the dialectics of the universe as systematized units.

In Uzbek computational linguistics, the national model of the noun denoting the subject is defined as [ **Ot** ]. In the dissertation for the major paradigm – the proper noun expressing the specific person and thing within the noun category: for proper names such as *Samarkand, Uchtepa, Munojot, Shakhboz*, the national model [ **Ot<sup>A</sup>** ] was presented; for homogeneous nouns such as *book, school, street, grape, animal*, which represent the general name of an object – the national model [ **Ot<sup>t</sup>** ]; for definite nouns such as *book, apple, grape, notebook, computer*, used in singular and plural forms – the national model [ **Ot<sup>a</sup>** ]; for abstract nouns such as *freedom, love, affection, and affection*, which express the meaning of reinforcement rather than the meaning of quantity when taking plural suffixes – the national model [ **Ot<sup>m</sup>** ]; for singular nouns such as *house, room, book, notebook*, which represent one of the same things in the singular form - the national model [ **Ot<sup>y</sup>** ]; for collective nouns such as *army, people, forest, crowd, and country*, which also represent the sum of the same things in the singular form – the national model [ **Ot<sup>j</sup>** ]. All models in the semantic groups of the noun are formed on the basis of the national model of the noun. This leads to the recognition of the noun model as the **core model** as the basis of small devices.

In the dissertation, based on direct observation, non-countable nouns such as *air, cloud, water*, which are directly observed and affect our sense organs, were modeled in the form [ **Ot<sup>a1</sup>** ], definite nouns that are counted, such as *bird, house, carpet* – in the form [ **Ot<sup>a-sk</sup>** ]; uncountable proper names like *Samarkand, Shakhboz, Munojat* - in the form [ **Ot<sup>A1</sup>** ]; uncountable abstract nouns such as *love, longing, sadness* - in the form [ **Ot<sup>m1</sup>** ]; countable singular nouns such as *house, key, glasses* - in the form [ **Ot<sup>y-sk</sup>** ]; countable collective nouns such as *people, army* – In the form [ **Ot<sup>j-sk</sup>** ]. For nouns among abstract nouns that have countable properties (*demon, fairy, giant, monster*), the national model [ **Ot<sup>m-sk</sup>** ] is created, uncountable collective nouns included in the collective noun class can be generalized to the model [ **Ot<sup>j1</sup>** ]. For example: The words *people, humanity, crowd* all have the meaning of generalization. Thus, the number of national structural models according to the countability and uncountability of nouns was increased to 8. These models are the smallest device in relation to the semantic groups of nouns and were evaluated as structural models in the dissertation. **A structural model** is a theoretical device that defines the internal order and division of language units, that is, inter-categorical and categorical boundaries, and allows us to express the formalized structure of language from the point of view of computational linguistics.

The semantic group models of nouns are approached as system models from the point of view of the structural model. At the same time, when compared with the core model of nouns, these models occupy the status of structural models. In the

work, the terms microsystem model and transposition model have been used for these models. **Microsystem model** – a model with a unique dual position in the hierarchy of concepts, on the one hand it appears as a component of a larger conceptual system, and on the other hand it incorporates smaller concepts and elements. That is, a microsystem model is a multi-layered model that is simultaneously linked to a higher-level concept and, at the same time, has an internal structural division. In the dissertation, the terms microsystem model and transposition model are used as synonymous concepts expressing the same content.

Also, the dissertation proposed 1 macrosystem model, which is recognized as a core model within the noun category. This model is interpreted as the paradigmatic and structurally largest and most generalizing device of the noun category. The models of proper nouns and uncountable proper nouns were given the status of national models of equal value. They are formed as independent structural units within the macrosystem model, based on lexical-semantic and grammatical features. As a result of research and linguistic statistical analysis, it was determined that there are a total of 37 models within the noun category.

In the second paragraph of the chapter entitled “**Semantic field models in the noun category**”, the issues of distinguishing the boundaries between "sign" and "symbol" that constitute the essence of the concept of the semantic field based on the dialectics of generality and specificity, combining lexemes in the minds of national language speakers based on certain laws, and modeling the lexical-semantic system of the language as a linguistic resource for the national corpus of Uzbek language in this combination process.

Approaching language as a system, distinguishing a number of dialectical categories such as generality-particularity in the relationship of language units, led to the study of the semantic field of the world as a huge systemic area, which constitutes a set of infinite paradigms. It is known that the term semantic field was first used by Y. Trier. He meant by this term “field or circle of concepts”. In Uzbek linguistics, views on semantic field play an important role in the ideas of such prominent linguists as A. Nurmonov, H. Nematov, E. Begmatov, R. Rasulov, Sh. Iskandarova, O. Bozorov, B. Qilichev, A. Sobirov, I. Madrakhimov. However, the boundaries between “sign” and “symbol” have not yet been fully defined.

In paradigms belonging to the noun category, similar and some different lexemes are combined, and different signs cannot deny similarity. For example, *animals, trees, and cars* – they are paradigms taken separately. They exist in the minds of members of society and materialize in the memory of computer programs. We consider this on the example of animals: such zoonyms stored in the minds of language speakers as a commonality, essence, and possibility, as *wolf, bear, lion, cow, cat, goat* are generalized to the model [  $\text{Ot}^{t-zoo}$  ] in the computational memory.

In the dissertation, it was substantiated that zoonyms are grouped into a general class – extensional – within the national model [  $\text{Ot}^{t-zoo}$  ], also according to contradictory signs, internal paradigm – wild animals as intensionals – within the national model [  $\text{Ot}_{yovvoyi}^{t-zoo}$  ]; and domestic animals – within the national model [  $\text{Ot}_{uy}^{t-zoo}$  ]. There are many such nests in the semantic field of Uzbek language. For

example, P. Safarova distinguishes several LMGs from domestic animals<sup>106</sup>. From this point of view, the dissertation argues that other paradigms in the semantic field can be modeled based on this approach.

In the dissertation, the paradigm members are modeled separately in terms of age, gender, and species characteristics. In particular, by gender *baytal*, *biya*, *jiyron*... are included into the national model [  $\text{Ot}_{\text{ot-(a)}}^{\text{t-zoo}}$  ]; *ayg'ir*, *saman*, *yo'rg'a*, *yobu*, *to'riq*, *bedov*... - into the national model [  $\text{Ot}_{\text{ot-(e)}}^{\text{t-zoo}}$  ]. The work also focuses on modeling the paradigms of task-sharing and the whole-part relationship: units involved in the production of speech sounds, such as *lungs*, *pharynx*, *larynx*, *oral cavity*, *palate*, *tongue*, *teeth*, *gums*, *lips*, interpreted as a task-oriented paradigm within the model [  $\text{Ot}_{\text{nutq}}^{\text{t-v}}$  ]; and clothing items, such as *sleeve*, *collar*, *button*, *hem*, *lining* – are analyzed within the framework of the whole-part relationship paradigm within the framework of the model [  $\text{Ot}_{\text{kostum}}^{\text{a-}\oplus}$  ].

The research pays special attention to the issue of ranking. The ranking of paradigm members was first proposed in Uzbek linguistics by the scientists S.Giyosov, R.Safarova, M.Narziyeva, M.Fayzullayev, O.Bozorov, A.Sobirov, I.Madrakhimov, O.Bozorov<sup>107</sup>. They identify an internal gradual line within the paradigm and show the degree of intensification by moving from the main meaning in a positive direction [  $\rightarrow$  ], and in a negative direction [  $\leftarrow$  ] – on the basis of a diagram-model. Besides, in the work, ranking relationship of the nominal units *individual*  $\rightarrow$  *baby*  $\rightarrow$  *infant*  $\rightarrow$  *child*  $\rightarrow$  *teenager*  $\rightarrow$  *adolescent*  $\rightarrow$  *young man*  $\rightarrow$  *girl*  $\rightarrow$  *young woman*  $\rightarrow$  *woman*  $\rightarrow$  *old woman* is expressed based on the model [  $\text{Ot}_{\text{yosh}}^{\text{t-}\uparrow}$  ]. The issue of relying on this approach in the process of national modeling of the elements of existence has been raised.

The phenomenon of synonymy (symmetry) in the semantic field of a noun is one of the most extensively studied lexical paradigms in Uzbek linguistics. Linguists emphasize the need to take into account the object of perception underlying the word – the denotation, the meaningful concept - the significate, and their expression - the lexeme in a general way in the formation of synonymous paradigms. From this point of view, among synonymic line *vatan*, *diyori*, *yurt*, *maskan*, *go'sha*, *mamlakat*, *o'lka* is analyzed, here the word *vatan* is denotated, the meaning of “birthplace” is significate, the lexemes *diyori*, *yurt*, *maskan*, *go'sha*, *mamlakat*, *o'lka* are means of expression. These lexemes constitute a whole paradigmatic system within the national model [  $\text{Ot}_{\text{vatan}}^2$  ] as the linguistic support of the national corpus of Uzbek language.

<sup>106</sup> Неъматов Х., Расулов Р. Ўзбек тили систем лексикологияси асослари. – Тошкент: Ўқитувчи, 1995. – Б.113.

<sup>107</sup> Гиясов С.Т. Семантическая структура и компонентный анализ качественных прилагательных узбекского языка: Автореф. дисс... канд. филол. наук. – Ташкент, 1983.; Сафарова Р. Гипонимия в узбекском языке: Автореф. дисс... канд. филол. наук. – Ташкент, 1987.; Нарзиева М. Семантическая структура имен существительных возрастной характеристики лица в узбекском языке: Автореф. дисс... канд. филол. наук. – Тошкент, 1992.; Файзуллаев М. Сравнительно-типологические особенности лексико-семантических групп глаголов психического состояния в русском и узбекском языках: Автореф. дисс... канд. филол. наук. – Ташкент, 1994.; Бозоров О. Ўзбек тилида даражаланиш: Филол. фан. д-ри. ...дисс. автореф. –Тошкент, 1997. – Б. 23–30.; Собиров А. Ўзбек тили лексикасининг систем-структур тадқиқи. Монография. – Ташкент: Booknomy print, 2022. – Б. 173.; Madrahimov I. O'zbek tilida lingvistik tasnif metodologiyasi. Filol. fan. d-ri. ...diss. avtoref. –Toshkent, 2024. – Б. 37.; Bozorov O. Lingvistik model // O'zbek tili va adabiyoti. 2008. № 4. – В. 56.

According to H.Nematov and R.Rasulov, synonymous words, in addition to having negative and positive semantic connotations, also include units with a neutral meaning, where the connotation feature is not taken into account. They note that within the synonymous series, there are also level conflicts between lexemes belonging to negative and positive groups. For example, among the synonyms *yuz, bet, aft, bashara, turq, chehra, oraz, jamol*, the lexemes *bet, aft, bashara, turq* have a negative connotation and are included into the national model [  $\text{Ot}_{\leftarrow yuz}^2$  ]; the lexemes *chehra, oraz, jamol* have a positive connotation and are included into the national model [  $\text{Ot}_{yuz\rightarrow}^2$  ].

The dissertation also analyzed national models that take into account semantic, stylistic and functional features of synonyms. In particular, for synonym series *yuz bet aft, bashara, turq, chehra, oraz, jamol*, the national model [  $\text{Ot}_{\leftarrow\rightarrow}^{2\uparrow}$  ] or [  $\text{Ot}_{\leftarrow yuz\rightarrow}^{2\uparrow}$  ] are recommended.

The third paragraph of the chapter is entitled “**Proper nouns as a separate system**”. In this paragraph, The phenomenon of transonymization observed in the system of proper nouns that make up the linguistic landscape of the world is analyzed based on national models and its paradigmatic features are revealed.

The scope of Uzbek onomastics is extremely wide, this is explained by the number of common nouns and their division into different groups. In particular, *anthroponyms* – proper names of people [  $\text{Ot}^{A-\text{antro}}$  ]; *toponyms* – proper names of geographical objects [  $\text{Ot}^{A-\text{topo}}$  ]; *theonyms* – names of gods, goddesses, religious and mythical figures and creatures [  $\text{Ot}^{A-\text{teo}}$  ]; *zoonyms* - nicknames, special names given to animals [  $\text{Ot}^{A-\text{zoo}}$  ]; *hemeronyms* – names of media outlets [  $\text{Ot}^{A-\text{gemero}}$  ]; *mythonyms* – names of imaginary and fictional objects [  $\text{Ot}^{A-\text{mifo}}$  ].

It is known that among onomastic units, anthroponyms – names – stand out. They are the uniqueness of personality and individual identity, an important bridge connecting a person to society and a symbol representing his nationality. For example, in male names, elements such as *Muhammad, Abdu* are found as the first component, and suffixes such as *din, bek, jan, boy* are found as the second component. In female names, the words *gul, zulf, ay, dil* as the first component, and suffixes *bonu, sanam, niso, khan* as the second component are widespread:

names like *Mukhammadaziz, Mukhammadamin, Mukhammadyusuf, Mukhammadsodiq, Mukhammadshukur, Mukhammadali* are expressed in the national model [  $\text{Ot}_{\text{Muhammad}+}^{A-\text{antro}}$  ]; names like *Abdusamad, Abdulaziz, Abdurashid, Abdurauf, Abdujalil, Abdukarim, Abdumo‘min, Abdushukur, Abdumajid* – [  $\text{Ot}_{\text{Abdu}+}^{A-\text{antro}}$  ]; names like *Alibek, Nurlibek, Ulug‘bek, Otabek, Nurbek, Jonibek, Oybek, Norbek, Elbek, Durbek, Tolibek, Risqbek, Jo‘rabek* - [  $\text{Ot}_{+\text{bek}}^{A-\text{antro}}$  ]; names like *Gulsanam, Gulchehra, Gulhayo, Gulbahor, Gulnoza, Gulmira, Gulida, Gulzira, Gulzoda, Gulshan, Guljamol* – [  $\text{Ot}_{\text{gul}+}^{A-\text{antro}}$  ]; names like *Mehriniso, Zebiniso, Oyniso, Shahriniso, Xayriniso, Baxtiniso, Ulniso, Matniso* – [  $\text{Ot}_{+\text{niso}}^{A-\text{antro}}$  ].

Animal names are also used in the human name, and this mostly has some symbolic meaning: *Shermuhammad, Arslonbek, Po‘latbulbul* and others. They can be given through the model [  $\text{Ot}_{\text{zoo}+}^{A-\text{antro}}$  ] or [  $\text{Ot}_{+\text{zoo}}^{A-\text{antro}}$  ]. Also, in toponyms names

like Yashnobod, Mirobod, Xalqobod, Mirzobod, Dehqobod in the model [  $\text{Ot}_{+obod}^{A-topo}$  ] are common. In addition, place names, the second part of which is a proper noun, such as Buyuk Britaniya, Janubiy Koreya, Shimoliy Amerika, Ko'hna Urganch, Yangi Choshtepa, are included in the model [  $\text{Ot}_{t\sim A}^{A-topo}$  ].

Our ancestors have always paid serious attention to the unity of personal qualities in names. They sought to give their children a good name, wishing them a good life and the full development of their abilities. For example, *Qobil, Iqbol, Solih, Soliha, Siddiq, Mo'min*. There are also names that they are given with the belief in the saying "Good intentions are half a treasure", with a dream in the heart and a specific goal. For example, *To'xtasin, Mustahkam, Ulbo'lsin, O'lmas, O'lmasoy, Turg'un, Anora, Nortoy, Norposhsha*. The first of these, the category of desire<sup>108</sup> as a wish for a child are included into the national model [  $\text{Ot}_{istak}^{A-anthro}$  ]; the second, the category of intention, with the intention of achieving one's dream, with the goal – into the national model [  $\text{Ot}_{niyat}^{A-anthro}$  ]. Such conceptual models are not only found among Uzbek names, but also among names belonging to other peoples. If European peoples such as German, English, and French have their own unique forms and content, turkic peoples such as Kazakh, Karakalpak, and Kyrgyz have similarities to Uzbek names. This is due to the commonality of the cultures of these peoples.

In Uzbek linguistics, toponymic patterns also have a large layer. In particular, there is observed a transonymization of names associated with the name of the area where the necronym is located, the names of saints who lived in that area, and legends and myths. In such cases, necronyms related to the name of the territory are included into the model [  $\text{Ot}_{topo}^{A-nekro}$  ]; necronyms related to the names of saints – into the model [  $\text{Ot}_{antro}^{A-nekro}$  ].

The dissertation also substantiates the observation of the phenomenon of transonymization in the proper names of celestial bodies through models. In particular, the name of a celestial body is transferred to the name of a plant [  $\text{Ot}_{kosmo}^{A-fito}$  ]: *Sunbula* (zodiac sign); animal name is transferred to celestial body name [  $\text{Ot}_{zoo}^{A-kosmo}$  ]: *Asad, Qisqichbaqa, Hamal, Katta ayiq, Kichik ayiq*; human name is transferred to celestial body name [  $\text{Ot}_{antro}^{A-kosmo}$  ]: *Bahrom* (Mars), *Nohid* (Venus), *Shams* (Sun); the name of the legend and myth is transferred to the name of the celestial body [  $\text{Ot}_{mifo}^{A-kosmo}$  ]: *Temir qoziq, Yetti og'ayni, Egizaklar*. Thus, they are given in separate models as new invariants.

It is known that the phenomenon of transonymization is also characteristic of ergonyms. In Uzbek linguistics, ergonyms were the object of research by M. Saparniyazova<sup>109</sup>. She considers a number of trends in modeling ergonyms, including local, cross-cultural, trans-territorial models, but does not dwell in detail on the issue of national modeling of ergonyms. The dissertation studies the formation of the name of a trade, production and service object from anthroponyms, toponyms, cosmonyms and other proper nouns using transposition models. For

<sup>108</sup> O'zbek tilining izohli lug'ati. II-III jildlar, – Toshkent: G'afur G'ulom, 2023. – B. 556.

<sup>109</sup> Saparniyazova M. O'zbek tili ergonimlarining struktur-semantik, lingvomadaniy va pragmatik tadqiqi: Filol. fan. d-ri. ...diss. avtoref. – Toshkent, 2023. – 240 b.

example, for LLC “*Siyovush trans omad*” MChJ, “*Zeus*” car repair shop, the national model [  $\text{Ot}_{\text{mifo}\gg\text{antro}}^{\text{A-ergo}}$  ] is recommended.

In the third chapter entitled “**Principles of modeling grammatical paradigms of nouns**” the distribution of the noun word form in the speech chain is analyzed, revealing the role of the noun in modeling the structure of the sentence. The categories of possession, agreement, and number are modeled nationally. This chapter examines the building blocks of sentence constructions – grammatical markers, word combinations, and the smallest primitive model of a sentence – clause constructions – on the example of the noun. Also, grammatical indicators, word combinations, and the smallest primitive model of a sentence – the constructions of sentence parts – are studied using the example of the noun class.

The first paragraph of the chapter is entitled “**Models of grammatical categories of nouns**”. The fact that the number category in nouns has several forms makes it appropriate to use affix models when modeling plural nouns formed morphologically. **Affix-model** is the transformation of an affix (addition) that functions to connect one word to another in the morphology of Uzbek language into an invariable form and into a model. In particular, [ **-lar** ] in Uzbek language, [ **-s** ], [ **-es** ] in English are affix-models, they are reflected in the coefficient of the singular noun model. As a result, the international model of the plural noun, created with the morphological method, is given in the form [  $\text{N}_{-s}$  ], [  $\text{N}_{-es}$  ], the national model – in the form [  $\text{Ot}_{-lar}$  ].

In the dissertation, based on the linguistic statistical analysis of national models of the number category of nouns, it is substantiated that there is 1 morphological number category model in Uzbek, 13 in English, and 25 in Russian, and that there is no incorrect plural form. In particular, such borrowings as *hol-ahvol*, *faqir-fuqaro*, *valad-avlod*, *taraf-atrof*, *haq-huquq*, *xalq-xaloyiq*, *shayx-mashoyix*, *nabiy-anbiyo*, *she’r-ash’or*, *tolib-talaba*, *shoir-shuaro*, *kabir-akobir*, *xulq-axloq* are also included in the noun model in the singular.

In the dissertation, collective nouns, such as *xalq*, *xaloyiq*, *lashkar*, *armiya*, *olomon*, *poda*, *uyur*, *suruv*, are reflected in the model [  $\text{Ot}^j$  ]; such uncountable definite nouns as *un*, *yog’*, *tuz*, *bulut*, *yomg’ir*, *suv* – in the model [  $\text{Ot}_{-lar}^{\text{a-jk}}$  ]; the plural meaning of the suffix [ **-lar** ] added to a proper noun – in the model [  $\text{Ot}_{-lar}^{\text{A-jk}}$  ], definite nouns that express the meanings of aggregation and generalization according to the speech situation are expressed in the model [  $\text{Ot}^{\text{a-P|jk}}$  ] and presented as models of the total category. Also, through addition of the affix [ **-lar** ] to abstract nouns, such as *sevinch*, *ko’ngil*, *havo*, *jannat*, *hasrat*; definite nouns denoting single object, such as *yurak*, *bosh*, *til*, and pair object, such as *ko’z*, *quloq*, *oyoq*, *etik*, *tufli*, grammatical gradation is formed and abstract nouns expressing such a stylistic meaning are included to the model [  $\text{Ot}_{-lar}^{\text{m-dk}}$  ]; definite nouns – to the model [  $\text{Ot}_{-lar}^{\text{a-dk}}$  ].

The dissertation shows the formation of plural nouns by lexical-semantic and mixed methods in relation to lexical and affix models. In particular, *ko’p odam//ko’p odamlar* are given through the formula [  $\text{R}^{\text{m}} \rightarrow \text{Ot}_{-lar}$  ]; *barcha odam//barcha*

*odamlar* – through the formular [  $\mathbf{O}^{be} \rightarrow \mathbf{Ot}_{-lar}$  ]; *qancha-qancha odam//qancha-qancha odamlar* – through the formular [  $\mathbf{O}_{2x}^s \rightarrow \mathbf{Ot}_{-lar}$  ]; *katta-katta uy//katta-katta uylar* – through the formular [  $\mathbf{Sf}_{2x} \rightarrow \mathbf{Ot}_{-lar}$  ]; *qop-qop bug‘doy//qop-qop bug‘doylar* – through the formular [  $\mathbf{Ot}_{2x} \rightarrow \mathbf{Ot}_{-lar}$  ]. It is argued that in another position these models are the building blocks of syntactic constructions, in particular, the word combination model.

When considering the models of the categories of possession and agreement in this paragraph of the dissertation, it is also emphasized that a word that receives a possessive affix enters into grammatical contact with a noun in the accusative case in a sentence, agrees in person and number, and that such agreement of a personal pronoun and a noun forms a word combination with adaptive relation, which is considered a syntactic unit. In particular, the national model of adaptation of personal pronoun and possessive affix [  $\mathbf{O}^{sh+1.2.3.|qk} \rightarrow \mathbf{Ot}^{+1.2.3.|ek}$  ] is compared with *possessive pronoun-adjective* model in English.

The second paragraph of the third chapter is entitled “**Models of the subordination relationship of nouns**”. In this paragraph, the position of the noun in a word combination is shown using models and supported by various examples.

It is known that word combination models have such forms as the relationship between the subordinate and dominant parts and their belonging to a certain category. Even various grammatical indicators with connecting elements are recorded in the form of models. In Turkic languages, in particular, in Uzbek, the place of the subordinate and dominant part is fixed: the subordinate word is placed before the dominant word. In particular, a subordinate clause indicating the syntactic relationship of the components of a compound is defined in the form [ **T** ], dominant word – in the form [ **H** ], their unchanging position – in the national model [ **T** → **H** ]. This is the only model of word combinations in our lexical reserve. For example, for the word combinations, such as *uyimizning tomi*, *akamning ishxonasi*, *ko‘chaning boshi*, the model [  $\mathbf{Ot}^{qk} \rightarrow \mathbf{Ot}^{ek}$  ] is considered as the generality (invariant), in another position, [ **T** → **H** ] is also considered general for the models in the form [ **Sf** → **Ot** ]. Therefore, the components of a word combination are immutable, and their completion with lexemes implies variability. For example, the models of the word combinations like *onamlarning aytganlari*, *bolalarning o‘qiyotgani* are in the form [  $\mathbf{TOt}^{qk} \rightarrow \mathbf{HSd}^{ek}$  ] or [  $\mathbf{TOt}_{-ning} \rightarrow \mathbf{HSd}_{-i}$  ], they are a national model of any word combination with adaptive relation with a dominant word expressed by an adjective and a subordinate word by a noun.

In Uzbek, combinations, such as *Navoiy kutubxonasi*, *Bobur bog‘i*, *Toshkent shahri*, *iyul oyi*, *o‘zbek xalqi*, *kuz fasli*, *vatan tuyg‘usi*, *mehnat daftarchasi*, are combined based on the type of subject of a certain gender, while expressing the meaning of the name and separation from the general. S.Nazarova expresses such combinations in in linguistic-syntactic form [ **Ob.k~Oe.k** ] = **SB**<sup>110</sup>. In this way, S.Nazarova distinguishes the word combination in the species marker – gender structure from the word combination in the genitive-attributive structure. In the dissertation, compounds in the structure of a proper noun (species) – a homogeneous

<sup>110</sup> Назарова С. Изохловчили бирикмалар.//Айюб Фулом ва ўзбек тилшунослиги. – Тошкент, 2004. – Б. 96–100.

noun (gender), such as *Navoiy kutubxonasi*, *Bobur bog'i*, *Toshkent shahri*, are included in the model [  $\text{Ot}^A \sim \text{Ot}^{t-ek}$  ]; such compounds in the structure of a homogeneous noun (species) – a homogeneous noun (gender) as *iyul oyi*, *o'zbek xalqi*, *kuz fasli*, *ichimlik suvi*, *vatan tuyg'usi*, *mehnat daftarchasi* – in the model [  $\text{Ot}^t \sim \text{Ot}^{t-ek}$  ]. Because in them, the relationship of subordination is broken, and the relationship of nomination, moderation (statement is ours – Sh.Z) takes precedence.

The word combination with the conjunction is also expressed by various lexemes. For example, *yangi to'n*, *chiroyli gul* are included into the model [  $\text{TSf} \rightarrow \text{HOT}$  ]; *o'sha bog'*, *shu kishi* – into the model [  $\text{TO} \rightarrow \text{HOT}$  ]; *do'stona munosabat*, *sharqona ohang* – into the model [  $\text{TR} \rightarrow \text{HOT}$  ]; *to'rtinchi fasl*, *bashinchi maktab* – into the model [  $\text{TR} \rightarrow \text{HOT}$  ]; *yurgan daryo*, *singan umid* – into the model [  $\text{TSd} \rightarrow \text{HOT}$  ].

In Uzbek, a word has different meanings depending on its position in the context. For example, *mis qozon*, *yog'och qoshiq*, *sopol kosa*, *oltin soat*. In the dissertation, the model [  $\text{TSf}^P \rightarrow \text{HOT}$  ] is recommended for this type of compounds. Here, [  $^P$  ] is considered a positional national model that indicates the syntactic-semantic position of the word expressed in the subordinate clause, going beyond its own scope, in the text. A **positional model** is a model that shows how a word belonging to a particular part of speech is used as another part of speech, based on the context of the text.

S. Nazarova says that the compounds meaning an object made of a specific substance are expressed in the linguistic-syntactic form [  $\text{Om} - a \sim \text{On} - b$  ] =  $\text{SB}^{111}$ . Since the subordination relationship is preserved in the components of such compounds, it is better to use the subordination model [  $\rightarrow$  ] rather than a sign of moderation [  $\sim$  ]. Because they retain the subordination of parts that are characteristic of a word combination.

There are also the combinations with explanatory-explained relation emerging as a defining characteristic of a person such as *professor Salimov*, *mayor Rustamov*, *qo'shni kampir*, *tilshunos olim*, *tikuvchi qiz*, *sinfdosh yigit*. S. Nazarova names such combinations as a classification of a person according to some characteristic and generalizes to the linguistic-syntactic pattern [  $\text{Osh} \sim \text{Osh}$  ] =  $\text{SB}^{112}$ . On this basis, in the dissertation, the compounds in the structure of a homogeneous noun (explanatory) – a proper noun (explained), such as *professor Salimov*, *mayor Rustamov*, are included into the model [  $\text{Ot}_{sh?}^t \sim \text{Ot}_{sh?}^A$  ]; such compounds in the structure of a homogeneous noun (explanatory) – a homogeneous noun (explained) *qo'shni kampir*, *tilshunos olim*, *tikuvchi qiz*, *sinfdosh yigit*, *uchuvchi ayol* – into the model [  $\text{Ot}_{sh?}^t \sim \text{Ot}_{sh?}^t$  ].

In the last paragraph of the chapter entitled “**Composite national models of the noun**”, the role of the noun in speech – its national models are discussed by analyzing the parts of speech as constructive derivatives. Also, the national model [  $\text{E}$  ], is recommended for subject, the national model [  $\text{K}$  ], is recommended for

<sup>111</sup> Назарова С. Изоҳловчили бирикмалар.//Айюб Ғулом ва ўзбек тилшунослиги. – Тошкент, 2004. – Б. 96–100.

<sup>112</sup> Назарова С. Изоҳловчили бирикмалар.//Айюб Ғулом ва ўзбек тилшунослиги. – Тошкент, 2004. – Б. 96–100.

predicate, the national model [ **T** ], is recommended for complement, the national model [ **A** ], is recommended for attributive, and for case, the national model [ **H** ] is recommended as an invariant.

The relationship between the main parts (subject and predicate) in a sentence is considered a minimal sentence, and according to the rules of formal logic, the subject and predicate model participates in the construction of such sentences. For example: *Men yozyapman. U o'qidi*. The subject in these sentences is expressed by the pronoun and has the model [  $\mathbf{E}_O \rightarrow \mathbf{K}_F$  ]. If the subject of the sentence is expressed by a noun, its model has the form [  $\mathbf{E}_{Ot} \rightarrow \mathbf{K}_F$  ]. For example: *Salima yozyapti. Karim o'qiyapti*.

The expansion of a sentence with secondary parts varies. For example, in sentences 1. *Biz universitetga keldik*. 2. *U ko'chada yuribdi*, case is acting as an expander. The category to which the components that make up sentences belong, the relationship of syntactic units with morphological units are reflected in the model [  $\mathbf{E}_O + \mathbf{H}_{Ot} \rightarrow \mathbf{K}_F$  ]. Thus, it becomes clear that the simplest (primitive) model of sentence constructions is the model of sentence fragments belonging to a certain part of speech.

The subject is always attached to the predicate. For example, 1. *Mashina yurdi*. 2. *Stanok ishladi*. These sentences has the pattern [  $\mathbf{E}_{Ot} \rightarrow \mathbf{K}_F$  ]. In addition to the noun in the main clause, the subject can also be expressed by compound words in this clause. For example, 1. *Qimirlagan qir oshar*. 2. *Suvning shildir-shildir eshitildi*.

The noun-like adjective model in the first sentence – [  $\mathbf{E}_{Sd>Ot} + \mathbf{H}_{Ot} \rightarrow \mathbf{K}_{Hn}$  ];

The imitative word model in the second sentence – [  $\mathbf{A}_{Ot} \rightarrow \mathbf{E}_{Ts>Ot} \rightarrow \mathbf{K}_F$  ];

It is known that in the construction of a sentence, the complement enters into a syntagmatic relationship with the preposition and takes the form it requires. For example, 1. *Ra'no Salimadan chiroyli*. 2. *Kecha Salimani ko'rdim*. In the first sentence, the complement with the object has the model [  $\mathbf{E}_{Ot} + \mathbf{T}_{Ot} \rightarrow \mathbf{K}_{Sf}$  ], in the second sentence, the complement without the object has the model [  $\mathbf{H}_R + \mathbf{T}_{Ot} \rightarrow \mathbf{K}_F$  ].

For adjective in Uzbek linguistics, it is appropriate to use the national model [ **A** ]. For example, *Samarqand – chiroyli shahar*. In this sentence, noun-predicate is the word *shahar*, the word *chiroyli* serves the function of defining its symbolic valence. The model of this sentence has the form [  $\mathbf{E}_{Ot} + \mathbf{A}_{Sf} \rightarrow \mathbf{K}_{Ot}$  ]. It expresses the sign of the parts that fill the void of the predicate, creating the relationship of qualifier-qualified and genitive-attributive. For example, 1. *Ochil buva o'tkir, qora ko'zli, serqosh, chiroyli yigit bo'lgan*. The sentence has an qualifier-qualified relationship, its content is given in the national model [  $\mathbf{E}_{Ot} + \mathbf{A}_{Sf}^4 \rightarrow \mathbf{K}_{Ot}$  ]. In word combination analysis: four word combinations with conjunctive relation [  $\mathbf{A}_{Sf}^4 \rightarrow \mathbf{K}_{Ot}$  ] and one subject-predicate adaptation – minimal sentence [  $\mathbf{E}_{Ot} \rightarrow \mathbf{K}_{Ot}$  ] are identified.

A word belonging to the noun class, regardless of which part of the sentence it belongs to, also has valences such as state, time, reason, purpose, quantity. In this respect, it has a syntagmatic relationship with the predicate in the sentence and is

given in the function of case [ **H** ] (the universal model – M). For example, *Biz universitetga keldik*. The word *keldik* in this sentence expresses a predicate, and the word *universitetga* is used as a place valence. A model of such sentences has the form [ **E<sub>O</sub> + H<sub>Ot</sub> → K<sub>F</sub>** ].

The syntagmatic relationship between the case and the predicate in a sentence has the construction of a word combination with controlling relation. For example, *U Samarqanddan kecha keldi*. This sentence uses a case of place expressed with noun, and for such sentences, the model [ **E<sub>O</sub> + H<sub>Ot</sub> + H<sub>R</sub> → K<sub>F</sub>** ] is recommended. In word combination analysis: one model of word combination with controlling relation [ **H<sub>Ot</sub> → K<sub>F</sub>** ]; one - with conjunctive relation [ **H<sub>R</sub> → K<sub>F</sub>** ] and the model of minimal sentence [ **E<sub>O</sub> → K<sub>F</sub>** ] are constructed.

## CONCLUSION

1. The system-structural representation of linguistic units plays an important role in understanding the linguistic landscape of the world. Therefore, in contemporary linguistics, great attention is being paid to the internal structure of language, its rules, and the mechanisms of their expression in real speech, particularly the modeling of grammatical units. As a result of grammatical modeling, the structural units of language and their interrelations are generalized, and a conceptual representation of the elements of the real world in human cognition is created. In this process, lexical units, grammatical structures, semantic structures, and pragmatic content are key factors.

2. The first step in creating a morphological analyzer of the national corpus of Uzbek language is to create an electronic morphological dictionary of Uzbek language, and at the next stage, all suffixes will be grouped according to their functional features, and their possible logical basis in Uzbek language will be formed. This theory implies the need to model the lexical-semantic and grammatical paradigms of nouns.

3. Modeling of language units is a generalization of speech phenomena in the language system, which is carried out on the basis of dialectical laws such as generality-particularity, invariance-variability, substance-accident, immutability-variability, essence-event, possibility-reality, cause-effect, set-classification, code-message, visual-actuality, abstraction-concreteness. These laws, which form the basis of the dialectics of the world, are realized in the opposition of language and speech.

4. All level units of the language are considered a totality formed by the interaction of certain internal elements. In turn, the lower level unit is the constructive material of the higher level unit. In this sense, syntactic constructions should be recognized as the highest level of generalization.

5. The signs of a linguistic object are divided into those that are most important for modeling and those that are not important to pay attention to in the modeling process (in fact, they are also necessary, but not important in the modeling process), and its structure is created based on the most important signs. This shows that modeling has an empirical principle.

6. Language units are imprinted in the consciousness of each speaker of the language in different phenomena. In this process, the level, worldview, knowledge, social background, age, gender, and national-cultural characteristics of the speakers also play an important role. In this sense, the “same” phenomena presented to our sensory organs also have different models according to the national-cultural characteristics of each speaker of the language. This shows that each national language must have its own national patterns.

7. The division of words into categories has a long history. In this, attention is paid to such features as the designation of concepts that represent objects and phenomena in the external world that are not directly observed in a broad category, the presence of morphological categories, their position in the syntactic structure, and their compatibility with words in other categories. Currently, this process is interpreted as modeling. In this sense, word groups are considered the largest model of the dialectics of the universe.

8. In Uzbek linguistics, linguostatistical analysis of language unit models recommends not a single or limited model for linguistic support, but a reserve of models that study language units in different aspects. Automatic analyzers of Uzbek national corpus select primary models.

9. Proper names are essentially considered models. They are created as a result of subtracting the "directly observed" thing-phenomenon from insignificant signs, identifying, comparing and generalizing the most important signs. They also have a special significance in expressing important concepts of national culture, reflecting the commonality of the cultures of peoples. From this point of view, it is relevant to study proper names as a separate system.

10. The compositional models that show the function of the noun in a sentence are considered as the arrangement of the morphological model chain within the syntactic structure. In this process, noun units, along with their morphological forms – such as plural, possessive, and case suffixes – perform a specific function and occupy a certain syntactic position in the sentence structure.

11. Paradigms are formed in the minds of members of society as cognitive models, shaping the semantic field and the linguistic picture of the world. These conceptual wholes are materialized in the linguistic support of computer programs. As a result, the semantic field transforms into an intellectual semantic memory, and the linguistic picture of the world evolves into an intellectual linguistic world. This process is considered one of the key factors in the creation of the Uzbek National Corpus, contributing to the linguistic enrichment of language material and characterized by its potential to enhance the deep study and processing of language in artificial intelligence systems.

**НАУЧНЫЙ СОВЕТ PhD.03/04.06.2021.Fil.132.01 ПО ПРИСУЖДЕНИЮ НАУЧНЫХ  
СТЕПЕНЕЙ ПРИ КОКАНДСКОМ ГОСУДАРСТВЕННОМ УНИВЕРСИТЕТЕ**

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**АНДИЖАНСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ**

**ЗАРМАСОВ ШАХБОЗ ШАХРИДДИН УГЛИ**

**ПРИНЦИПЫ МОДЕЛИРОВАНИЯ ЧАСТЕЙ РЕЧИ УЗБЕКСКОГО ЯЗЫКА (На  
примере имен существительных)**

**10.00.11 – Теория языка. Прикладная и компьютерная лингвистика**

**АВТОРЕФЕРАТ**

**диссертации доктора философии по ФИЛОЛОГИЧЕСКИМ наукам (PhD)**

**Коканд – 2025**

**Тема диссертации доктора философии (PhD) по филологическим наукам зарегистрирована в Высшей аттестационной комиссии при Министерстве высшего образования, науки и инноваций Республики Узбекистан за № B2023.3.PhD/Fil3703**

Диссертация выполнена в Андижанском государственном университете  
Автореферат диссертации на трёх языках (узбекский, английский, русский (резюме)) размещен на веб-странице Научного совета (www.kspi.uz) и в информационно-образовательном портале «Ziyonet» (www.ziyonet.uz).

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Защита диссертации состоится «03» 10 2025 года в 9:00 часов на заседании Научного совета PhD.03/04.06.2021.Fil.132.01 при Кокандском государственном университете по адресу: 150700, г.Коканд, ул.Турон, 23. Тел: (99873) 542-38-38; Факс: (99873) 542-11-43; e-mail: qiqondpi@umail.uz.

С диссертацией можно ознакомиться в Информационно-ресурсном центре Кокандского государственного университета (зарегистрирована под № 17). Адрес: 150700, г.Коканд, ул.Турон, 23. Тел.(99890) 508-64-42; e-mail: qdri\_arm@umail.uz

Автореферат диссертации разослан «19» сентября 2025 года.

(Протокол рассылки № 28 от «03» октября 2025 года).



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## **ВВЕДЕНИЕ (аннотация диссертации доктора философии (PhD))**

**Целью исследования** является выявление диалектической связи между элементами бытия и принципами национального моделирования частей речи узбекского языка на основе национальных моделей имен существительных.

### **Задачи исследования:**

пролить больше света на важность метода моделирования в области лингвистики и компьютерной лингвистики путем исследования диалектической связи между элементами бытия и теоретическими основами лингвистических моделей;

демонстрация наличия уникальных национальных моделей в каждом языке через разработку лексико-семантических, морфологических и синтаксических национальных моделей существительного;

разработать рекомендации по основным принципам национального моделирования морфологических ярусов узбекского языка, в частности частей речи;

расширенное раскрытие лексико-семантических, морфологических и синтаксических функций существительного с использованием национальных моделей;

создание национальных лингвистических моделей существительного для национального корпуса узбекского языка;

разработать композиционные национальные модели имен существительных посредством анализа позиции в словосочетании единиц, относящихся к именам существительным.

**Объект исследования** составляет имена существительные в узбекском языке.

**Предметом исследования** являются национальные модели лексико-семантических и грамматических парадигм имени существительного.

**Методы исследования.** При подготовке диссертации использовались индуктивные и дедуктивные методы, а также системный анализ, функциональный анализ, лингвостатистический анализ, взаимное сравнение объектов, методы синтеза и анализа.

### **Научная новизна исследования:**

на основе национального моделирования определены вопросы диалектного соотношения элементов бытия, наличия национальных моделей в разных системных языках и их выразительных возможностей, принципы лингвистических моделей, сохраняющих национальные формы для национального корпуса узбекского языка, в частности, лингвистико-семантические, морфологические и синтаксические парадигмы лексических единиц, относящихся к категории существительного;

на основе масштабного национального моделирования и лингвостатистического анализа смысловых групп существительных было разработано 37 структурных национальных моделей, в том числе 8 типов, основанных на исчисляемости и неисчисляемости. Диалектические отношения между единицами, принадлежащими существительным, основаны

на макросистемных, микросистемных, ядерных, транспозиционных и структурных моделях;

в качестве языковой опоры национально моделируются возрастные, гендерные и видовые характеристики парадигм в семантическом поле имен существительных, экстенционально-интенциональные, цело-частные, функциональные, синонимические и градационные отношения, а имена собственные моделируются лингвистически для национального корпуса узбекского языка как отдельной системы, основанной на лингвокультурном принципе. Отражение собственными именами существительных этнографических и национально-культурных особенности, доказаны моделями трансонимизации [  $Ot_{Muhammad+}^{A-antro}$  ], [  $Ot_{istak}^{A-antro}$  ], [  $Ot_{niyat}^{A-antro}$  ], [  $Ot_{Abdu+}^{A-antro}$  ], [  $Ot_{+bek}^{A-antro}$  ], [  $Ot_{gul+}^{A-antro}$  ], [  $Ot_{+niso}^{A-antro}$  ], а соотношение существительных в языковой картине мира – [  $Ot_{topo}^{A-nekro}$  ], [  $Ot_{antro}^{A-nekro}$  ], [  $Ot_{kosmo}^{A-fito}$  ], [  $Ot_{zoo}^{A-kosmo}$  ], [  $Ot_{antro}^{A-kosmo}$  ], [  $Ot_{mifo}^{A-ergo} antro$  ];

анализирована позиция единиц, относящихся к существительному, в предложении и словосочетании, созданы национальные модели типов словосочетаний, объясняющей и объясняемой связи, а также конструкций с родо-видовой структурой. Композиционная структура существительного, показывающая его функцию в предложении, формируется на основе согласования категорий принадлежности, падежа и числа, а также функциональные аспекты существительного на лексико-семантическом, морфологическом и синтаксическом уровнях доказаны на основе национальных моделей единиц, характерных для существительного.

#### **Практические результаты исследования состоят из следующих:**

Исследование обосновывается возможностью использования результатов в таких направлениях языкознания, как прагмалингвистика, социолингвистика, лингвокультурология, ономастика, когнитология и компьютерная лингвистика, в частности для более глубокого изучения лексико-семантических и грамматических систем, а также для развития теории лингвистического моделирования;

определено, что созданные в рамках диссертации национальные модели послужат важным ресурсом для лингвистического обеспечения цифровых технологических систем, в частности, для создания электронного морфологического словаря узбекского языка и системно-структурного исследования узбекского языкознания;

в результате научных исследований разработано 37 различных национальных моделей групп значений существительных, а также выдвинуты соображения о важности лингвокультурных принципов в национальном моделировании парадигм в семантическом поле и в лингвистическом мировоззрении.

**Достоверность результатов исследования** объясняется четкой постановкой проблемы, соответствием полученных в ходе исследования выводов методологии, решением актуальных для данной области вопросов,

теоретической обоснованностью лингвистических аргументов, разрешением случаев защиты исследования с использованием сравнительно-теоретических методов, а также публикацией результатов в отечественных и зарубежных научных журналах, на республиканских и международных научных конференциях, где рекомендуется публикация научных трудов, и реализацией полученных выводов на практике.

**Научная и практическая значимость результатов исследования.** Научная значимость результатов исследования определяется тем, что они служат формированию ранее не существовавшего национального подхода к языковому моделированию, изучению диалектных взаимосвязей между элементами бытия в более глубоком лингвокультурном отношении, теоретическому обогащению узбекской компьютерной лингвистики.

Практическая значимость результатов исследования объясняется тем, что они служат лингвистическим ресурсом для формирования национального корпуса узбекского языка, создают основу для лингвостатистического описания языка, а также для его интеграции в системы искусственного интеллекта, морфоанализаторы и программы автоматического перевода.

**Внедрение результатов исследований.** Теоретические предложения, практические рекомендации и выводы, изложенные в исследовании, нашли применение в следующих областях:

Выводы о наличии национальных моделей в разных системных языках и их выразительных возможностях, принципы языковых моделей, сохраняющих национальные формы для национального корпуса узбекского языка, в частности, национальное моделирование лингвистико-семантических, морфологических и синтаксических парадигм номинативно-специфических лексических единиц, были использованы в рамках практического проекта № П-4721101717 по теме «Создание интерактивной электронной платформы для объектов сферы услуг», выполняемого в 2022 –2023 годах в Центре обучения и повышения квалификации по основам делопроизводства на государственном языке при Ташкентском государственном университете узбекского языка и литературы имени Алишера Навои (Справка №1475 от 8 октября 2024 года). В результате определены принципы нейминга объектов торговли, производства и обслуживания с учетом национально-культурных, этимологических особенностей и географического положения;

Выводы о положении единиц группы имен существительных в предложениях и словосочетаниях, типах словосочетаний, соотношении изъяснительного и объясняемого, создании национальных моделей соединений в типично-родовой структуре, формировании композиционной структуры, указывающей функцию существительного в предложении на основе взаимной адаптации категорий принадлежности, согласования и числа, а также функциональных свойствах существительного на лексико-семантическом, морфологическом и синтаксическом уровнях были использованы в Самаркандском филиале Ташкентского университета информационных технологий имени Мухаммада ал-Хоразмий в 2021–2023

годах в рамках практического проекта по теме «Проектирование национального корпуса узбекского языка и разработка программного комплекса» (Справка № 723/01-01 от 8 ноября 2024 года). В результате были определены принципы проектирования национального корпуса узбекского языка, создания лингвистического обеспечения и разработки лингвистических моделей;

выводы о значении моделей трансонимизации в семантическом поле и языковом ландшафте мира, трансонимизации различных классов слов, в частности имен существительных, как явления, формирующего эмоциональные процессы, духовные и национально-культурные связи человека с миром, были использованы при подготовке выпуска социальной программы «Что скажете вы?», транслированного 17 января 2024 года в 18:00 на телеканале «Ташкент» на тему *“Научимся говорить правильно”* (Справка № 01-15-114 от 4 ноября 2024 года). В результате передача была обогащена научными данными того, что создание национальных названий, составляющих языковой ландшафт, зависит от эмоциональных процессов между людьми и окружающим миром.

**Апробация результатов исследования.** Результаты исследований были представлены в виде докладов на 4 научно-практических конференциях, в том числе, на 2 международных и 2 республиканских конференциях, проведено публичное обсуждение.

**Публикация результатов исследования.** Всего по теме диссертации были изданы 13 научных работ, в частности, 6 научных статей опубликованы в научных изданиях, рекомендованных Высшей аттестационной комиссией при Министерстве высшего образования, науки и инноваций Республики Узбекистан для публикации основных научных результатов докторских диссертаций, из них 2 – в зарубежных журналах.

**Структура и объем диссертации.** Диссертация состоит из введения, трех глав, заключения, списка литературы и приложения. Объем составляет 150 страницы.

**E'LON QILINGAN ISHLAR RO'YXATI**  
**LIST OF PUBLISHED WORKS**  
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