Géographie culturelle : ontologies, géolinguistique, lieux et objets géographiques

Exemple de la lakoutie (Arctique)

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UN PROBLEME FONDAMENTAL

- Nous sommes sur des territoires, de vastes portions de plusieurs milliers de kilomètres d'Est en Ouest de l'espace géographique **INCONNUS.**
- **L'absence de données**, d'information, de connaissance, d'accès pour des expéditions, etc.

Google Earth Pro, 2025

- Expéditions
- Télédétection spatiale
- Rapports (y compris historiques)
- Enquêtes auprès des populations locales : interviews, questionnaires, représentations, imaginaires, discours, etc.

PROBLÉMATIQUES

- **Démarche scientifique** : construction de connaissance géographique à partir de données éparses, ponctuelles, anciennes, fausses, etc., voire perçues, imaginées, manipulées…

- Repositionner à la fois **nos démarches et notre rapport à l'épistémologie** de la géographie.

- Identifier en quoi l'étude de ces territoires peuvent-être **sources d'avancées en géographie** (méthodologique, de production de connaissances, et nous donner des clés **de compréhension** de trois éléments qui guident mes recherches : territorialisation et de ses formes, **du développement humain et territorial**, de l'adaptation (climat, géopolitique, sociétal, etc.),… des conséquences, et des **futurs possibles**.

PROBLÉMATIQUES

- Question de **l'Homme, de l'anthropisation**, et du développement. Projet résolument Humaniste.

- Etats, sociétés : contrôle territorial, de ses usages (défense) et exploitations, de ses aménagements.

- Entrée de la géolinguistique : marqueurs culturels et géographiques. Elle renseigne sur l'état des connaissances qu'ont les populations sur leurs territoires, rendent-compte des enjeux à travers les usages, décrivent le territoire, l'espace géographique, l'évolution de l'environnement et du climat.

- C'est un marqueur à la fois local, associé à lieu et à des objets géographiques.

CONSTRUIRE DE LA CONNAISSANCE GEOGRAPHIQUE

Double positionnement de recherche (méthodologique) :

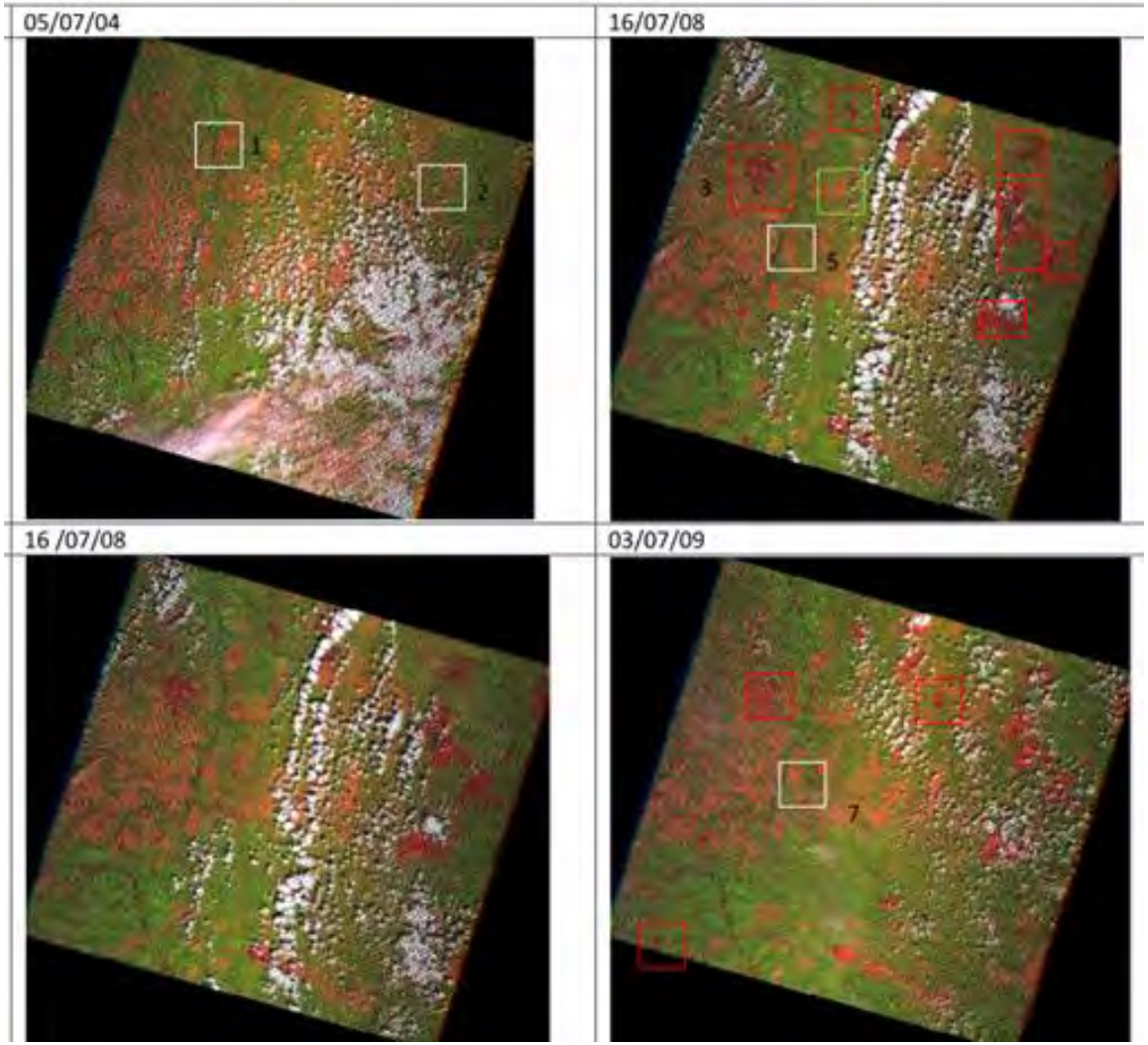
- Retour aux fondements de la géographie et de ses pratiques : géographie mathématique d'Eratosthène et celle des récits (descriptifs, culturels, etc.) qui s'appuie sur la notion du Tout, des parties, des lieux, des objets, et de la géolocalisation.

Problématique singulière :

- Comment lier les deux géographies ?
- Comment prendre en compte des données ponctuelles déterminées culturellement (pour ne pas dire multi-culturellement), dans un environnement sociétal paranoïaque (pression, peur, intimidations diffuses, etc.).
- Comment formaliser les récits, les descriptions de l'espace géographique, de ces dynamiques, les analyser, les modéliser et spatialisées ?

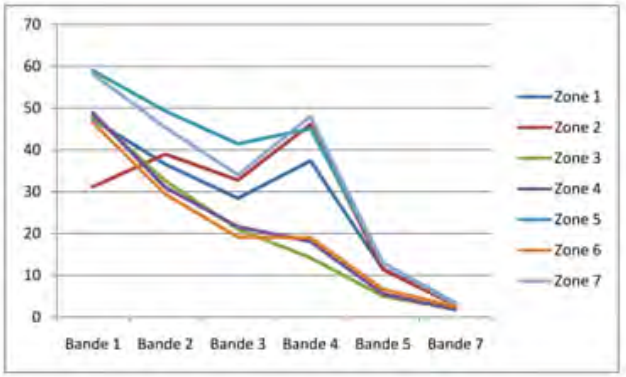
Objectif : construire des bases de connaissances géographiques / lier à des mesures de l'Espace géographique, pensées, perceptions, etc., des populations à travers notamment les formes de territorialisations et d'usages de l'espace géographique.

LIENS ENTRE SEMANTIQUES, PAYSAGES, TELEDETECTION ET USAGES



Sébastien Gadal, 2010-2025, Landsat 5 TM

Modèle de connaissance, espace géographique, mesure biophysique.



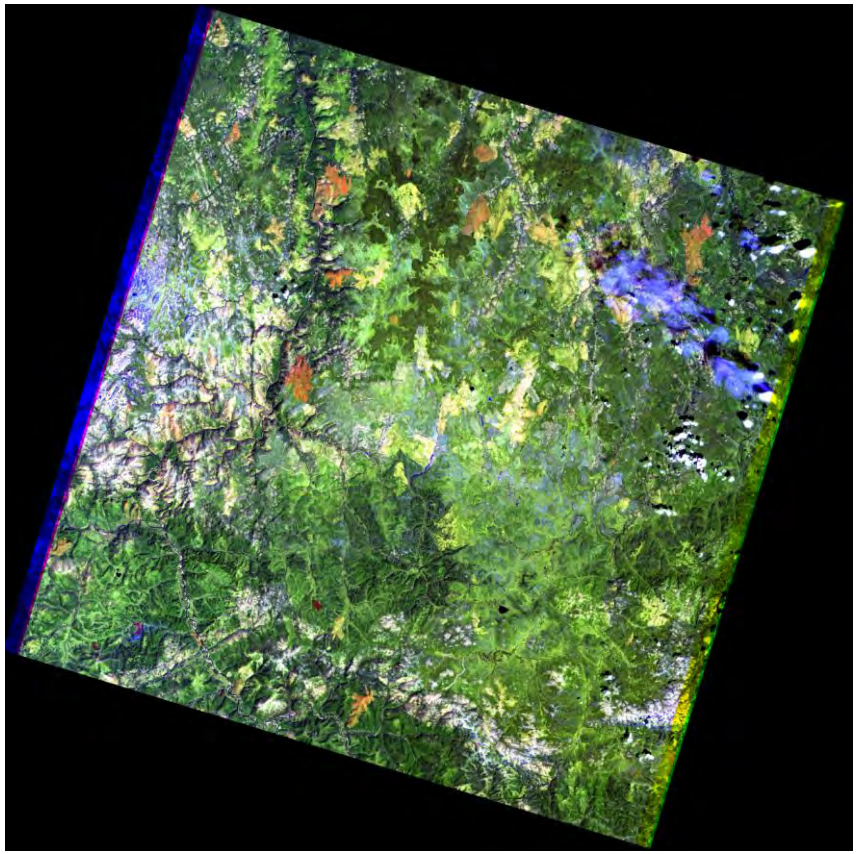
Sébastien Gadal, 2010-2025, Landsat 5 TM

PROGRAMME DE RECHERCHE MATHÉMATIQUES EN INTERACTION

LIENS ENTRE SEMANTIQUES, PAYSAGES, TELEDETECTION ET USAGES

Perceptions et représentations : prégnances culturelles

Européens, nord-américains



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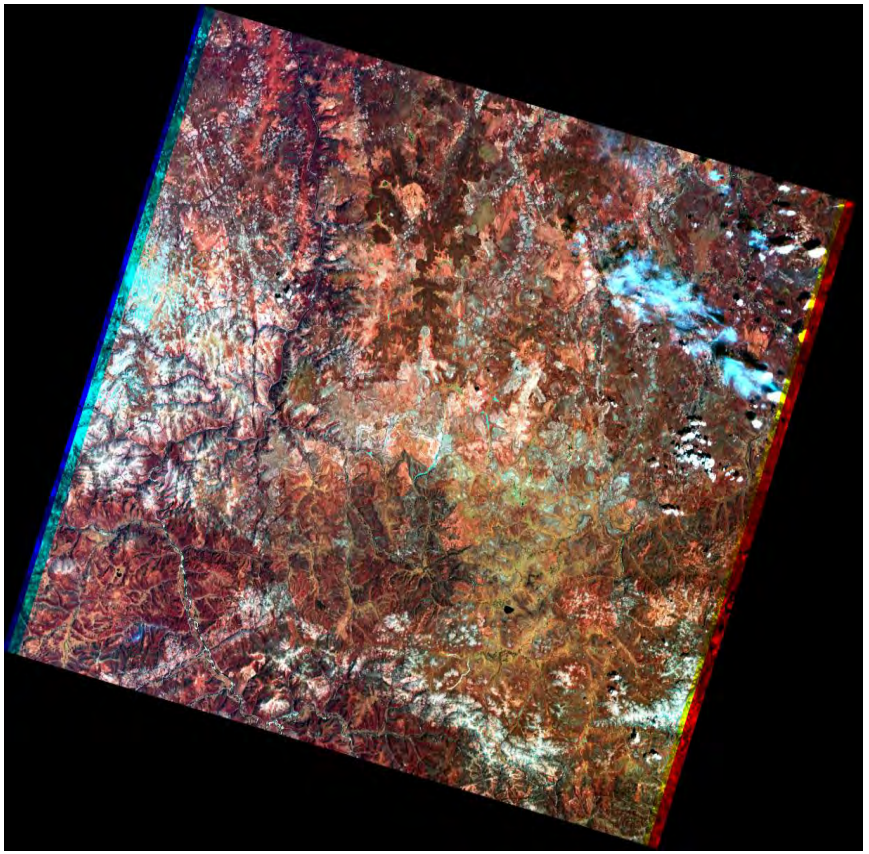
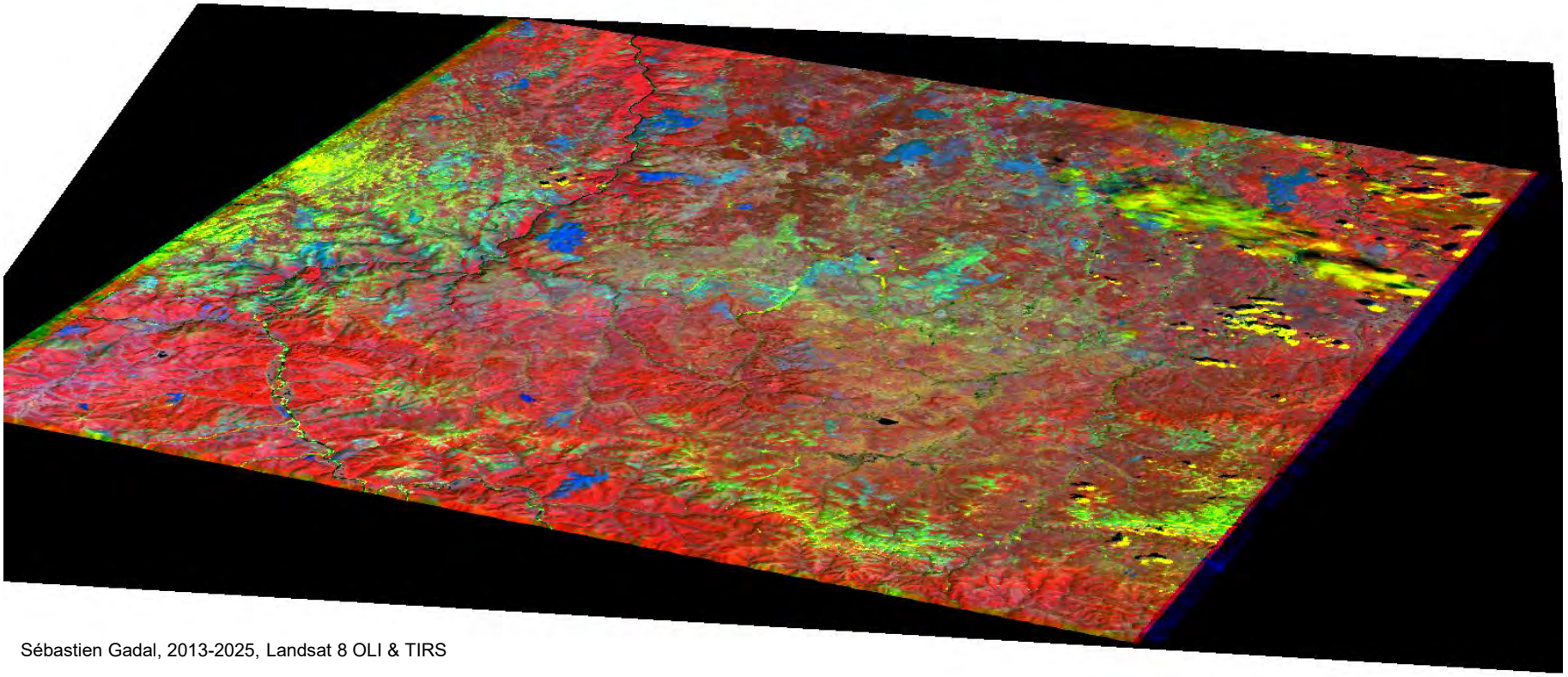
Evenks



Sébastien Gadal, 2010-2025, Landsat 5 TM

LIENS ENTRE SEMANTIQUES, PAYSAGES, TELEDETECTION ET USAGES

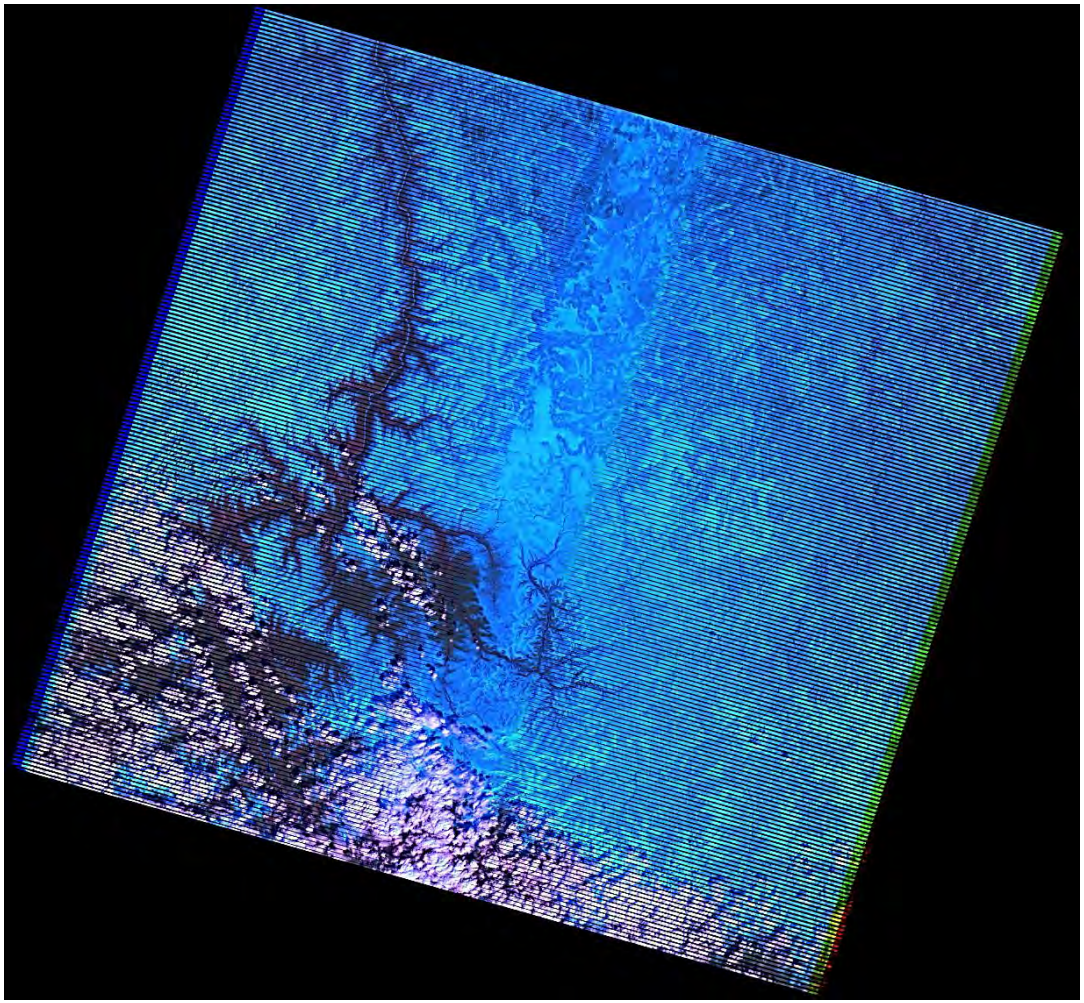
Perceptions et représentations des territoires Evenks en lakoutie : prégnances culturelles, impacts sémiotiques, sémiologiques et sémantiques chez les Evenks



Sébastien Gadal, 2013-2025, Landsat 8 OLI & TIRS

ESPACE cnrs AVIGNON UNIVERSITÉ Aix*Marseille université
FRANCE 2030 PROGRAMME DE RECHERCHE MATHÉMATIQUES EN INTERACTION

LIENS ENTRE SEMANTIQUES, PAYSAGES, TELEDETECTION ET USAGES



Sébastien Gadal, 2010-2025, Landsat 5 TM

Kever – marais avec mottes de terre (important pâturage rennes printemps)

Locallisation à envoyer ultérieurement

Amuuma – large bassin plan de rivière

Position : N 57°21'58".648 E 121°55'.566"

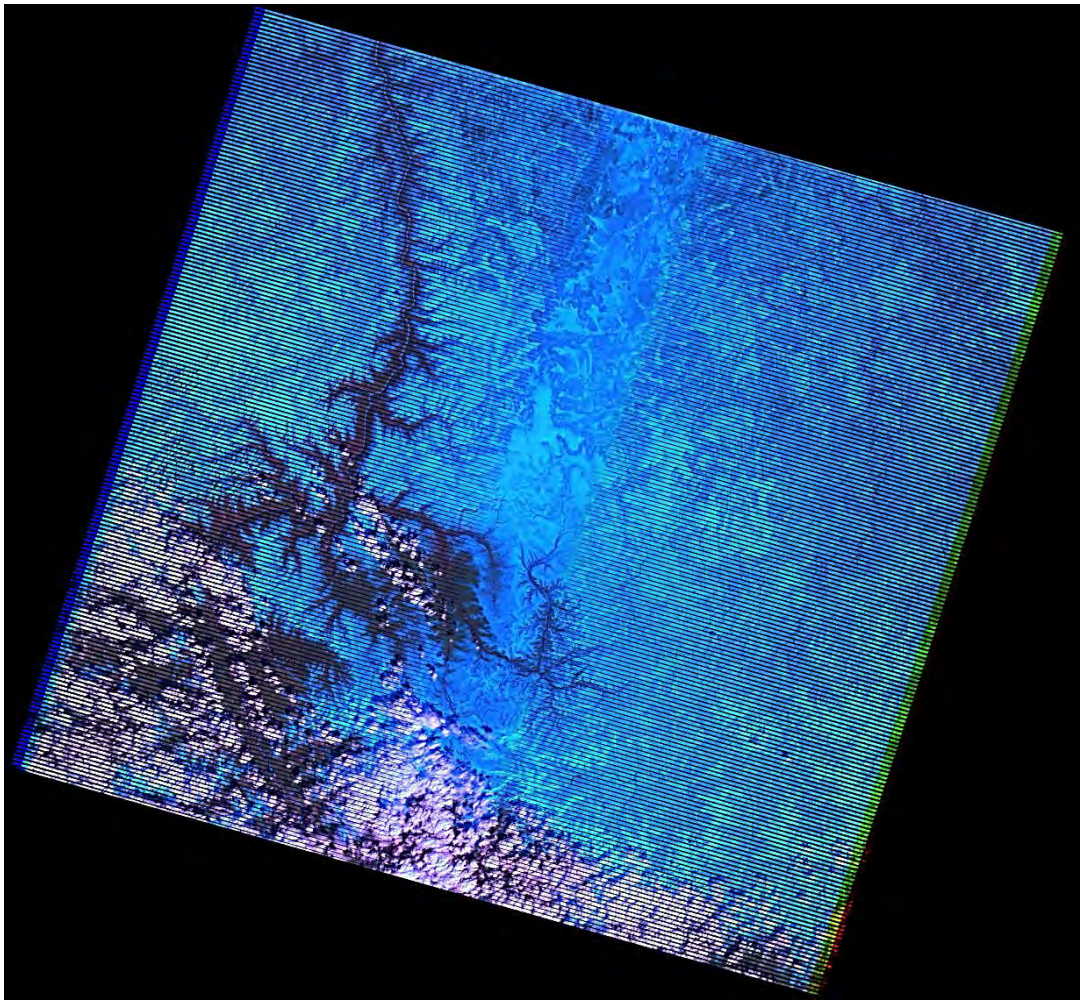
Ojo – sommet d'un mont/colline/montagne avec ou sans passage

Position : +/- N 57°20'21".73 E 121°55'05.06

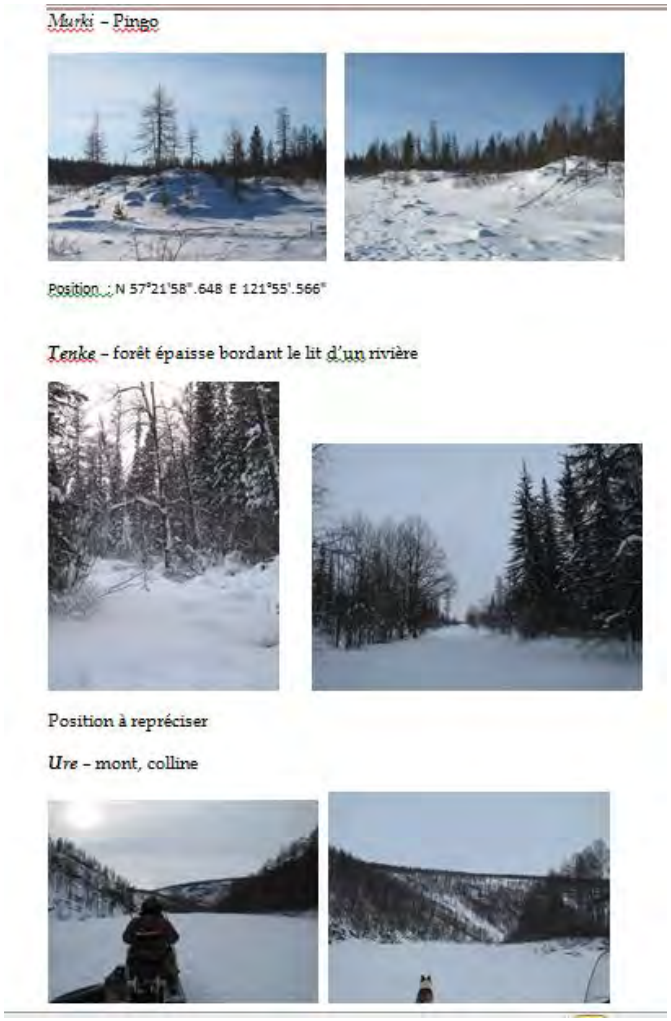
Alexandra Lavrillier, ANR BRISK, Projet-ANR-12-SENV-0005

PROGRAMME DE RECHERCHE MATHÉMATIQUES EN INTERACTION

LIENS ENTRE SEMANTIQUES, PAYSAGES, TELEDETECTION ET USAGES

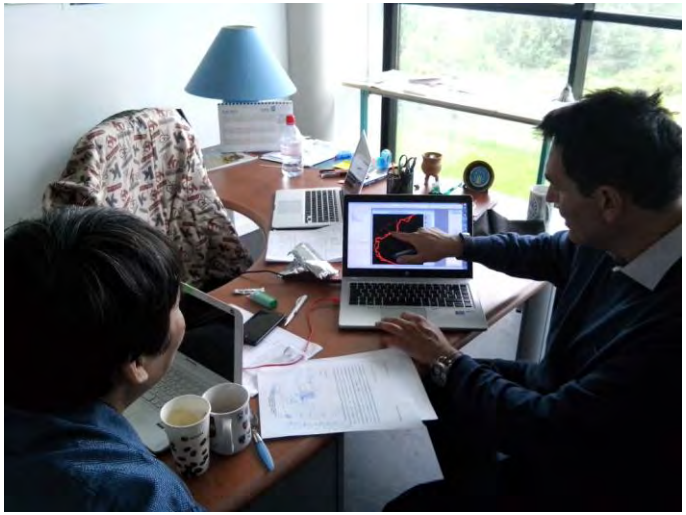


Sébastien Gadal, 2010-2025, Landsat 5 TM



Alexandra Lavrillier, ANR BRISK, Projet-ANR-12-SENV-0005

LIENS ENTRE SEMANTIQUES, PAYSAGES, TELEDETECTION ET USAGES



Sébastien Gadal, Alexandra Lavrillier, ANR BRISK, Projet-ANR-12-SENV-0005

Modélisation de la qualité des rivières de glace par télédétection pour les usages des Evenks (détermination des lieux de passage des rivières avec les troupeaux de rennes).

Toute une linguistique correspondant à des types de paysages identifiés en imagerie spatiale va être formalisée

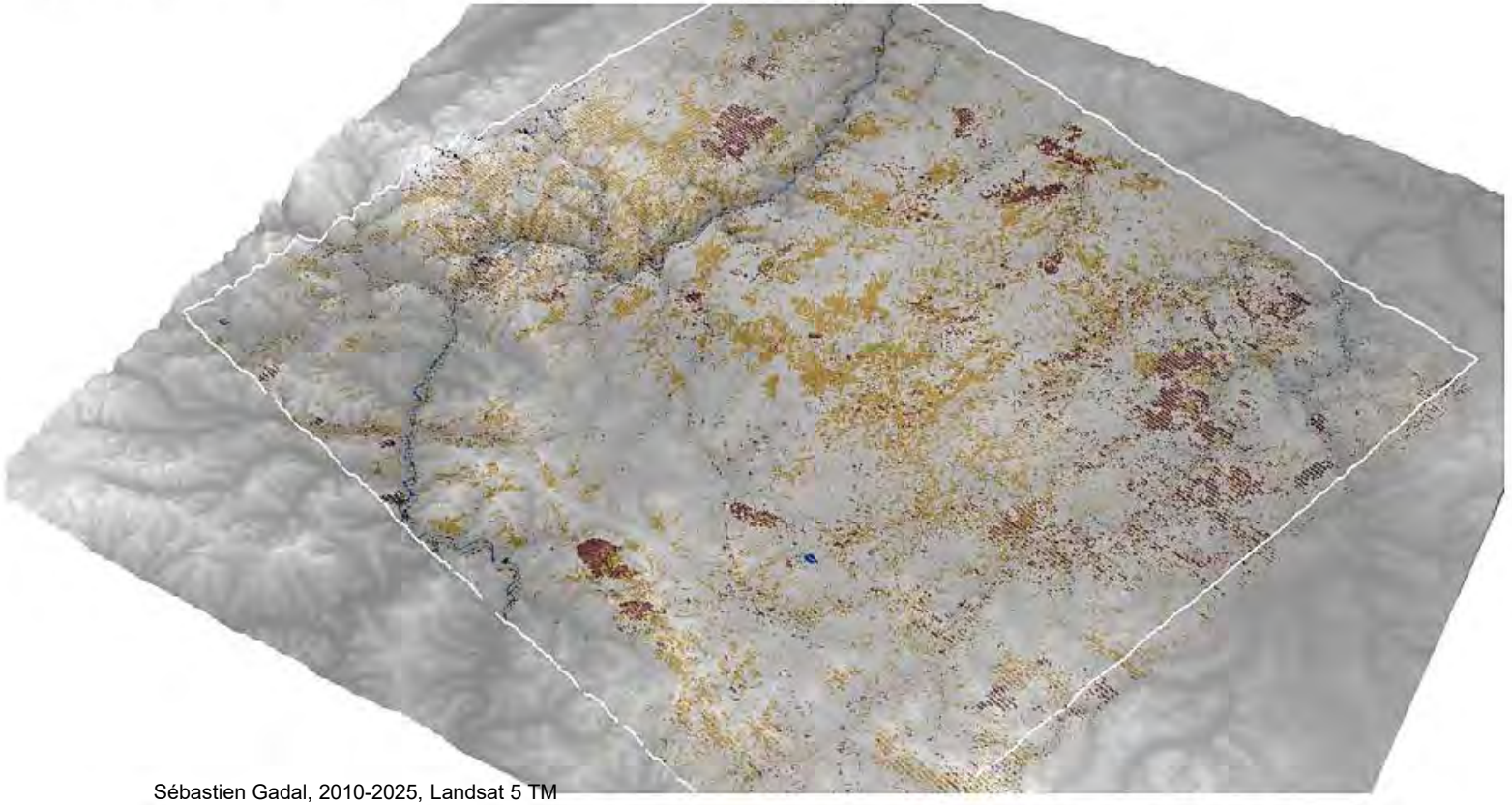
Fusion et comparaison de la télédétection et des connaissances territoriales et paysagères des Evenks en SIG.

Méthodes de traitements en géomatique

- Topographie et relief : DEM et SRTM.
- Couverture bio-végétale.
- Couleur de l'eau.
- LG2I : caractérisation spectrale de la qualité des eaux, qui vont-être réintégrés dans les modèles. Echantillons à analyser.
- Création d'un modèle spécifique de calcul des zones possibles de passage des sommets (montagnes) entre deux vallées et voir le niveau de validité par rapport à la pratique des éleveurs de rennes Evenks.
- Itinéraires simulés de trajectoires des déplacements des éleveurs de rennes Evenks (comprendre les choix géographiques et spatiaux par rapports aux pratiques) (voir s'il y a des possibilités de proposer de nouvelles routes).

LIENS ENTRE SEMANTIQUES, PAYSAGES, TELEDETECTION ET USAGES

Occupations des terres nues (marron) et terres végétalisées (orange) le 03.07.09



Sébastien Gadal, 2010-2025, Landsat 5 TM

Dates	05.07.04	16.07.08	03.07.09	Evolution1	Evolution2
Surface des terres nues (ha)	39 923,64	112 990,06	177 843,04	+73 066,42	+64 852,98
Surface des terres végétalisées (ha)	1 079 236.08	328 730,4	556 733,07	-750 505.68	+228 002,67
Total des terres	1 119 159.72	441 720.46	734 576,11	-677 439,26	+292 855,65

LIENS ENTRE SEMANTIQUES, PAYSAGES, TELEDETECTION ET USAGES

1. **Géographie physique**

   1.1. Sommets : avant un passage de col, il est long ou pas, passage entre deux vallées. Couverture végétale qui est dessus. On peut ou non le passer.
   1.2. Plateaux : passage pour passer d'une vallée à une autre, idem. La forme n'est pas importante, c'est le passage ou non.
   1.3. Descentes : Angle raisonnable, pas trop aigue pour une descente confortable. Angle réduit, on peut voir le gibier à viande et les prédateurs.
   1.4. Altitude : si cela est haut ou pas pour passer d'une vallée à une autre. Problème pour descendre. Monter c'est encore OK. Limites d'altitudes : Hautes montagnes (angles abruptes). Les animaux ne peuvent pas passer.

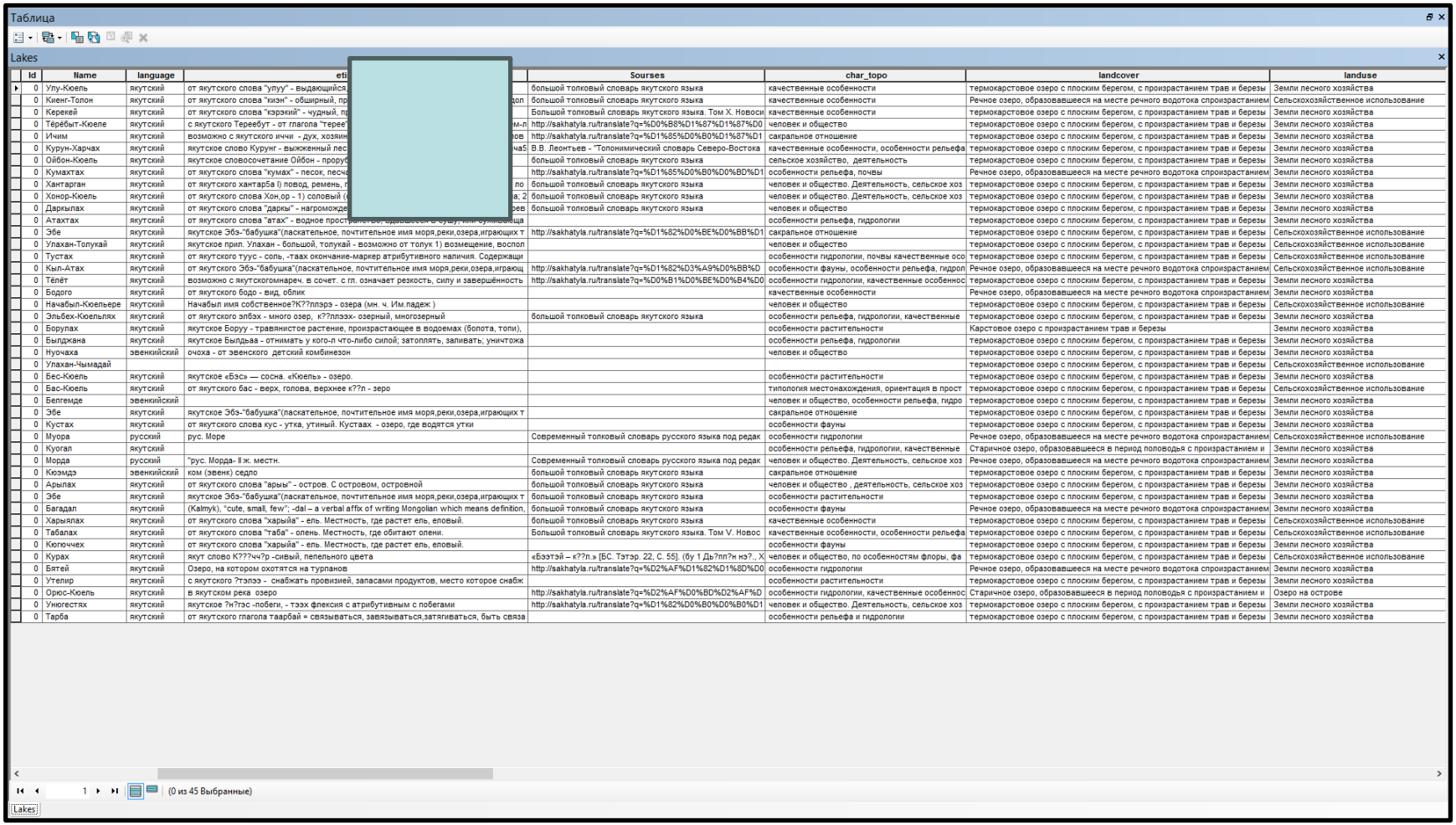
2. **Biogéographie**

   2.1. Couvert forestier

      2.1.1. Zones de pinèdes (pins) : terres sèches et planes, commode pour les déplacements. Ce n'est pas occupé par les ruisseaux qui peuvent gêner les déplacements. Les chiens se déplacent facilement car il n'y a pas de buissons et chasser les zibelines.
      2.1.2. Zones de sapins : partie avec les aiguilles épaisses et il fait froid (important l'été). L'été les bêtes féroces se réfugient comme les gibiers à sang noir. Pas de chasse. Difficile pour se déplacer. On entend bien le gibier.
      2.1.3. Mélèze : espace pour les chasseurs, pas de buissons, on peut trouver des baies, de temps en temps des pines de pins (hommes les récoltent). Du bon bois (chauffage). On peut organiser des feux de fumé pour les rennes l'été. Bois de base pour les constructions (tentes).
      2.1.4. Punius Pumila : Pignon de pins (pour manger) et des animaux (ours et zibelines), beaucoup d'ours. Hiver zibelines et tétra (coq de bruyère).
      2.1.5. Salix xxx : construction, bois souple qu'il faut chauffer, se trouve le long des rivières.

Sébastien Gadal, RSF 15-18-20047, Landscape ontology: semantics, semiotics, and geographic modeling

CONSTRUCTION D'UNE BASE DE DONNEES GEOLINGUISTIQUE MULTI-LANGUES D'OCCUPATION ET D'UTILISATION DES SOLS



Таблица

Lakes

Id	Name	language	eti	Sourses	char_topo	landcover	landuse
0	Улу-Куель	якутский	от якутского слова "улуу" - выдающийся	большой толковый словарь якутского языка	качественные особенности	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Киенг-Толон	якутский	от якутского слова "киэн" - обширный, пр	большой толковый словарь якутского языка	качественные особенности	Речное озеро, образовавшееся на месте речного водотока спроизрастанием	Сельскохозяйственное использование
0	Керекей	якутский	от якутского слова "кэрэкий" - чудный, пр	Большой толковый словарь якутского языка. Том X. Новоси	качественные особенности	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Тёрёбыт-Кюеле	якутский	с якутского Тереебут - от глагола "терее	http://sakhatyla.ru/translate?q=%D0%B8%D1%87%D1%87%D0	человек и общество	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Ичим	якутский	возможно с якутского иччи - дух, хозяин	http://sakhatyla.ru/translate?q=%D1%85%D0%B0%D1%87%D1	сакральное отношение	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Курун-Харчах	якутский	якутское слово Курунг - выжженный лес	В.В. Леонтьев - "Топонимический словарь Северо-Востока	качественные особенности, особенности рельефа	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Ойбон-Куель	якутский	якутское словосочетание Ойбон - прору	большой толковый словарь якутского языка	сельское хозяйство, деятельность	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Кумахтах	якутский	от якутского слова "кумах" - песок, песч	http://sakhatyla.ru/translate?q=%D1%85%D0%B0%D0%BD%D1	особенности рельефа, почвы	Речное озеро, образовавшееся на месте речного водотока спроизрастанием	Земли лесного хозяйства
0	Хантарган	якутский	от якутского хантарба I) повод, ремень,	большой толковый словарь якутского языка	человек и общество. Деятельность, сельское хоз	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Хонор-Куель	якутский	от якутского слова Хон,ор - 1) соловый (	большой толковый словарь якутского языка	человек и общество. Деятельность, сельское хоз	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Даркылах	якутский	от якутского слова "дарку" - нагроможде	большой толковый словарь якутского языка	человек и общество	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Атахтах	якутский	от якутского слова "атах" - водное простр		особенности рельефа, гидрологии	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Эбе	якутский	якутское Эбэ-"бабушка"(ласкательное, почтительное имя моря,реки,озера,играющих т	http://sakhatyla.ru/translate?q=%D1%82%D0%BE%D0%BB%D1	сакральное отношение	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Сельскохозяйственное использование
0	Улахан-Толукай	якутский	якутское прил. Улахан - большой, толукай - возможно от толук 1) возмещение, воспол		человек и общество	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Сельскохозяйственное использование
0	Тустах	якутский	от якутского туус - соль, -тах окончание-маркер атрибутивного наличия. Содержащи		особенности гидрологии, почвы качественные осо	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Сельскохозяйственное использование
0	Кыл-Атах	якутский	от якутского Эбэ-"бабушка"(ласкательное, почтительное имя моря,реки,озера,играющ	http://sakhatyla.ru/translate?q=%D1%82%D3%A9%D0%BB%D	особенности фауны, особенности рельефа, гидрол	Речное озеро, образовавшееся на месте речного водотока спроизрастанием	Сельскохозяйственное использование
0	Тёлёт	якутский	возможно с якутскогомнареч. в сочет. с гл. означает резкость, силу и завершённость	http://sakhatyla.ru/translate?q=%D0%B1%D0%BE%D0%B4%D0	особенности гидрологии, качественные особеннос	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Бодого	якутский	от якутского бодо - вид, облик		качественные особенности	Речное озеро, образовавшееся на месте речного водотока спроизрастанием	Земли лесного хозяйства
0	Начабыл-Кюельэре	якутский	Начабыл имя собственное?К??плэрэ - озера (мн. ч. Им.падеж)		человек и общество	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Сельскохозяйственное использование
0	Эльбех-Кюеллях	якутский	от якутского элбэх - много озер, к??плээх- озерный, многозерный	большой толковый словарь якутского языка	особенности рельефа, гидрологии, качественные	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Борулах	якутский	якутское Боруу - травянистое растение, произрастающее в водоемах (болота, топи),		особенности растительности	Карстовое озеро с произрастанием трав и березы	Земли лесного хозяйства
0	Быларжана	якутский	якутское Былдьаа - отнимать у кого-л что-либо силой; затоплять, заливать; уничтожа		особенности рельефа, гидрологии	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Нуочаха	эвенкийский	очоха - от эвенского детский комбинезон		человек и общество	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Улахан-Чымадай					термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Сельскохозяйственное использование
0	Бес-Кюель	якутский	якутское «Бэс» — сосна. «Кюель» - озеро.		особенности растительности	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Бас-Кюель	якутский	от якутского бас - верх, голова, верхнее к??л - зеро		типология местонахождения, ориентация в прост	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Сельскохозяйственное использование
0	Белгемде	эвенкийский			человек и общество, особенности рельефа, гидро	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Эбе	якутский	якутское Эбэ-"бабушка"(ласкательное, почтительное имя моря,реки,озера,играющих т		сакральное отношение	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Кустах	якутский	от якутского слова кус - утка, утиный. Кустаах - озеро, где водятся утки		особенности фауны	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Муора	русский	рус. Море	Современный толковый словарь русского языка под редак	особенности гидрологии	Речное озеро, образовавшееся на месте речного водотока спроизрастанием	Сельскохозяйственное использование
0	Куогал	якутский			особенности рельефа, гидрологии, качественные	Старичное озеро, образовавшееся в период половодья с произрастанием и	Земли лесного хозяйства
0	Морда	русский	"рус. Морда- II ж. местн.	Современный толковый словарь русского языка под редак	человек и общество. Деятельность, сельское хоз	Речное озеро, образовавшееся на месте речного водотока спроизрастанием	Земли лесного хозяйства
0	Кюэмдэ	эвенкийский	ком (эвенк) седло	большой толковый словарь якутского языка	сакральное отношение	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Арылах	якутский	от якутского слова "арыы" - остров. С островом, островной	большой толковый словарь якутского языка	человек и общество , деятельность, сельское хоз	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Эбе	якутский	якутское Эбэ-"бабушка"(ласкательное, почтительное имя моря,реки,озера,играющих т	большой толковый словарь якутского языка	особенности растительности	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Багадал	якутский	(Kalmyk), "cute, small, few"; -dal – a verbal affix of writing Mongolian which means definition,	большой толковый словарь якутского языка	особенности фауны	Речное озеро, образовавшееся на месте речного водотока спроизрастанием	Земли лесного хозяйства
0	Харыялах	якутский	от якутского слова "харыйа" - ель. Местность, где растет ель, еловый.	большой толковый словарь якутского языка	качественные особенности	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Сельскохозяйственное использование
0	Табалах	якутский	от якутского слова "таба" - олень. Местность, где обитают олени.	Большой толковый словарь якутского языка. Том V. Новос	качественные особенности, особенности рельефа	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Сельскохозяйственное использование
0	Кююччех	якутский	от якутского слова "харыйа" - ель. Местность, где растет ель, еловый.		особенности фауны	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Курах	якутский	якут слово К???ч?р -сивый, пепельного цвета	«Бээтэй – к??л.» [БС. Тэтэр. 22, С. 55]. (бу 1 Дь?лл?н нэ?., Х	человек и общество, по особенностям флоры, фа	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Сельскохозяйственное использование
0	Бятей	якутский	Озеро, на котором охотятся на турпанов	http://sakhatyla.ru/translate?q=%D2%AF%D1%82%D1%8D%D0	особенности гидрологии	Речное озеро, образовавшееся на месте речного водотока спроизрастанием	Земли лесного хозяйства
0	Утелир	якутский	с якутского ?тэлээ - снабжать провизией, запасами продуктов, место которое снабж		особенности растительности	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Орюс-Куель	якутский	в якутском река озеро	http://sakhatyla.ru/translate?q=%D2%AF%D0%BD%D2%AF%D	особенности гидрологии, качественные особеннос	Старичное озеро, образовавшееся в период половодья с произрастанием и	Озеро на острове
0	Унюгестях	якутский	якутское ?и?тэс -побеги, - тээх флексия с атрибутивным с побегами	http://sakhatyla.ru/translate?q=%D1%82%D0%B0%D0%B0%D1	человек и общество. Деятельность, сельское хоз	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства
0	Тарба	якутский	от якутского глагола таарбай = связываться, завязываться,затягиваться, быть связа		особенности рельефа и гидрологии	термокарстовое озеро с плоским берегом, с произрастанием трав и березы	Земли лесного хозяйства

1 (0 из 45 Выбранные)

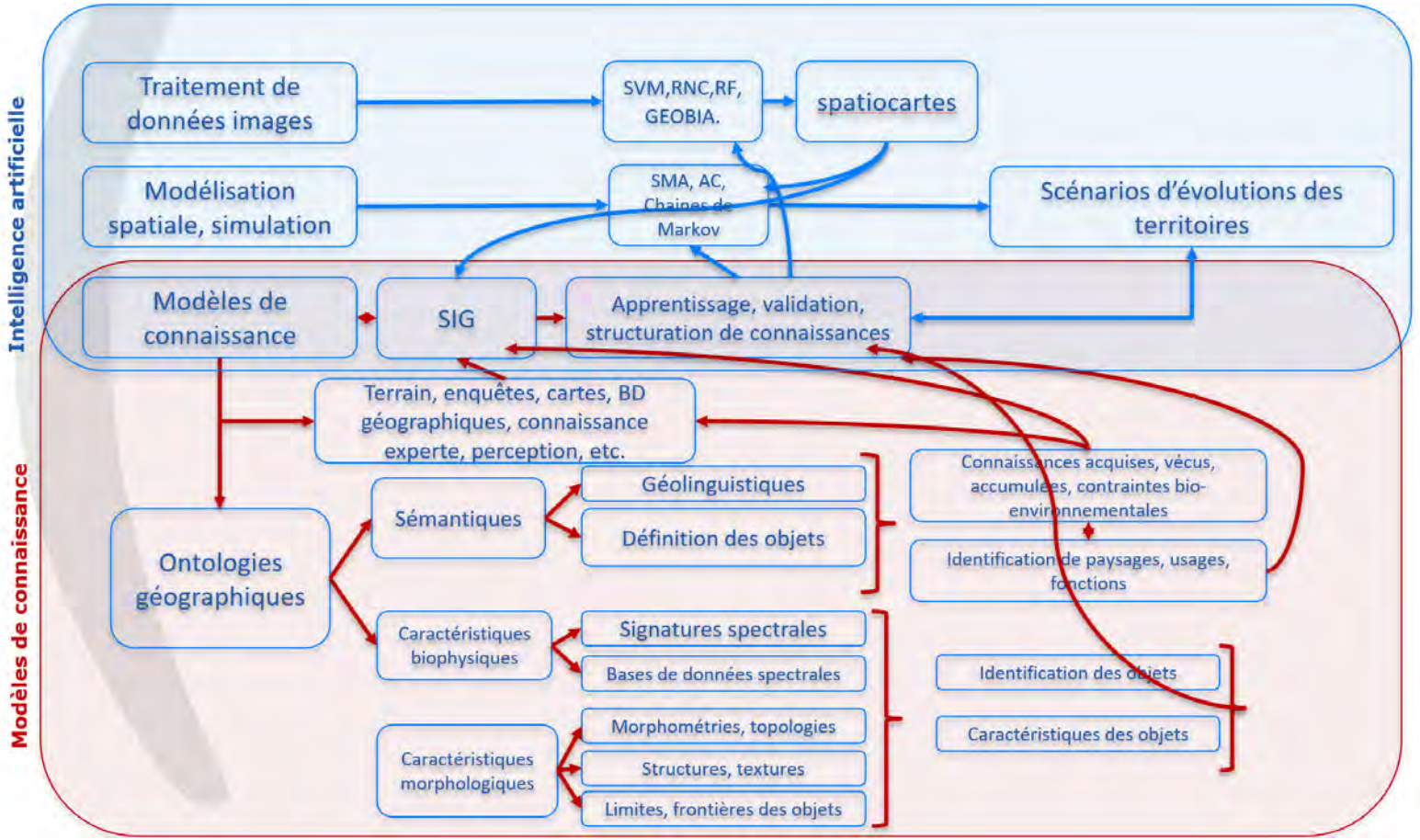
Lakes

Sébastien Gadal, RSF 15-18-20047, Landscape ontology: semantics, semiotics, and geographic modeling

Quelles formalisations ?

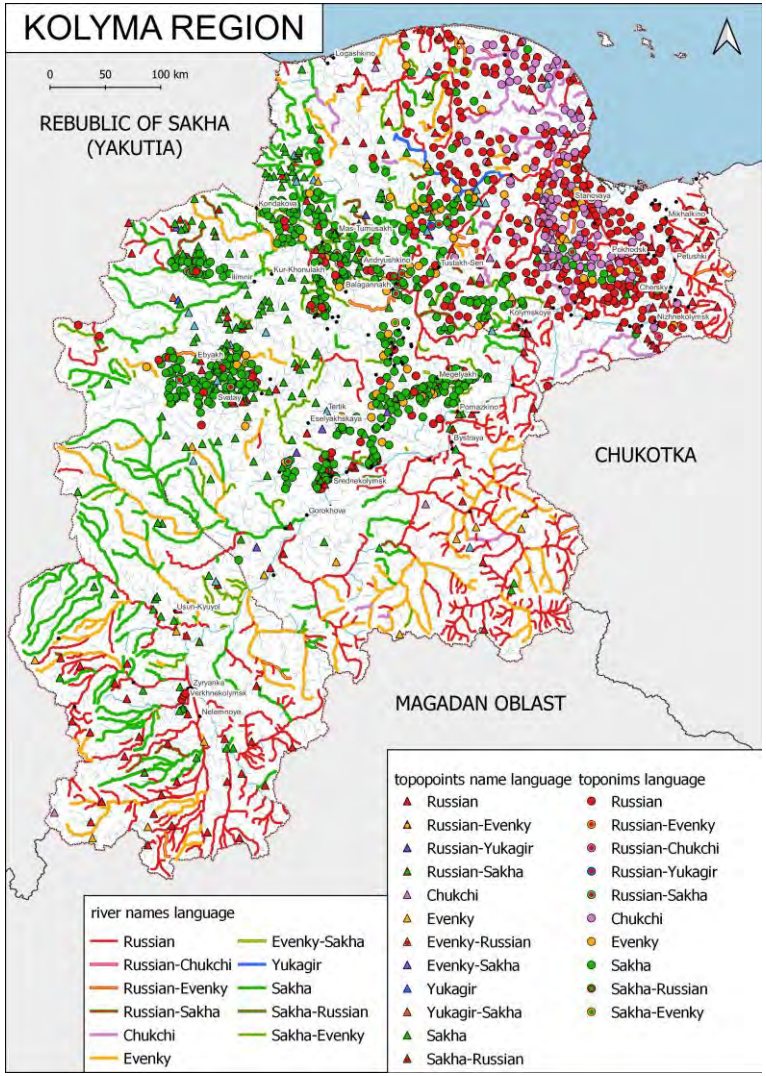
- Sciences géomatiques et traitement de l'information géographique
- Cartographie
- Mathématiques
- Formalisations (conceptualisations)

CONSTRUIRE DE LA CONNAISSANCE GEOGRAPHIQUE
Insertion dans le modèle général d'analyse géographique



Sébastien Gadal, Walid Ouerghemmi. Knowledge Models and Image Processing Analysis in Remote Sensing: Examples of Yakutsk (Russia) and Kaunas (Lithuania). 5th International Conference on Geographical Information Systems Theory, Applications and Management, 1 (ISBN 978-989-758-371-1), pp.282-288, 2019, Proceedings of the 5th International Conference on Geographical Information Systems Theory, Applications and Management, ⟨10.5220/0007752202820288⟩. ⟨hal-02120100⟩

LIENS TOPONYMES, LANGUES, ET REPARTITION SPATIALE



Moisei Zakharov, Sébastien Gadal, RSF 15-18-20047, Landscape ontology: semantics, semiotics, and geographic modeling, 2015-2025.

- Cartographie des toponymes
- Analyse linguistique
- Expéditions : collecte des données, contrôle des bases de données, etc.
- Identification des populations (ethnique), répartition (terrain), anthropo-génétique (YakuskCulture).
- Mixité, non mixité des populations (de facto isolées)

Section History

MOUNTAIN IN NORTHERN LANDSCAPE: EPIC SPACE AND REAL PLACES

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North-Eastern-Federal University, Yakutsk, Sakha Republic, Russia

ABSTRACT

The representation of the northern landscape in a narrative memory and the modeling of the mental map of imaginary space in culture is are one of the goals of the research project "Landscape ontology: semantics, semiotics, and geographic modeling" (№ 15-18-20047, funded by the Russian Science Foundation). The study of landscape ontology aims to identify and to understand the space through the lens of landscape ontology analysis, based on comprehensive study of geographic sources (toponymic glossaries, maps), but also the sources related to the "imagined space" (epic spaces, narrative stories, myths and legends about some place) defined environment in a cultural context.

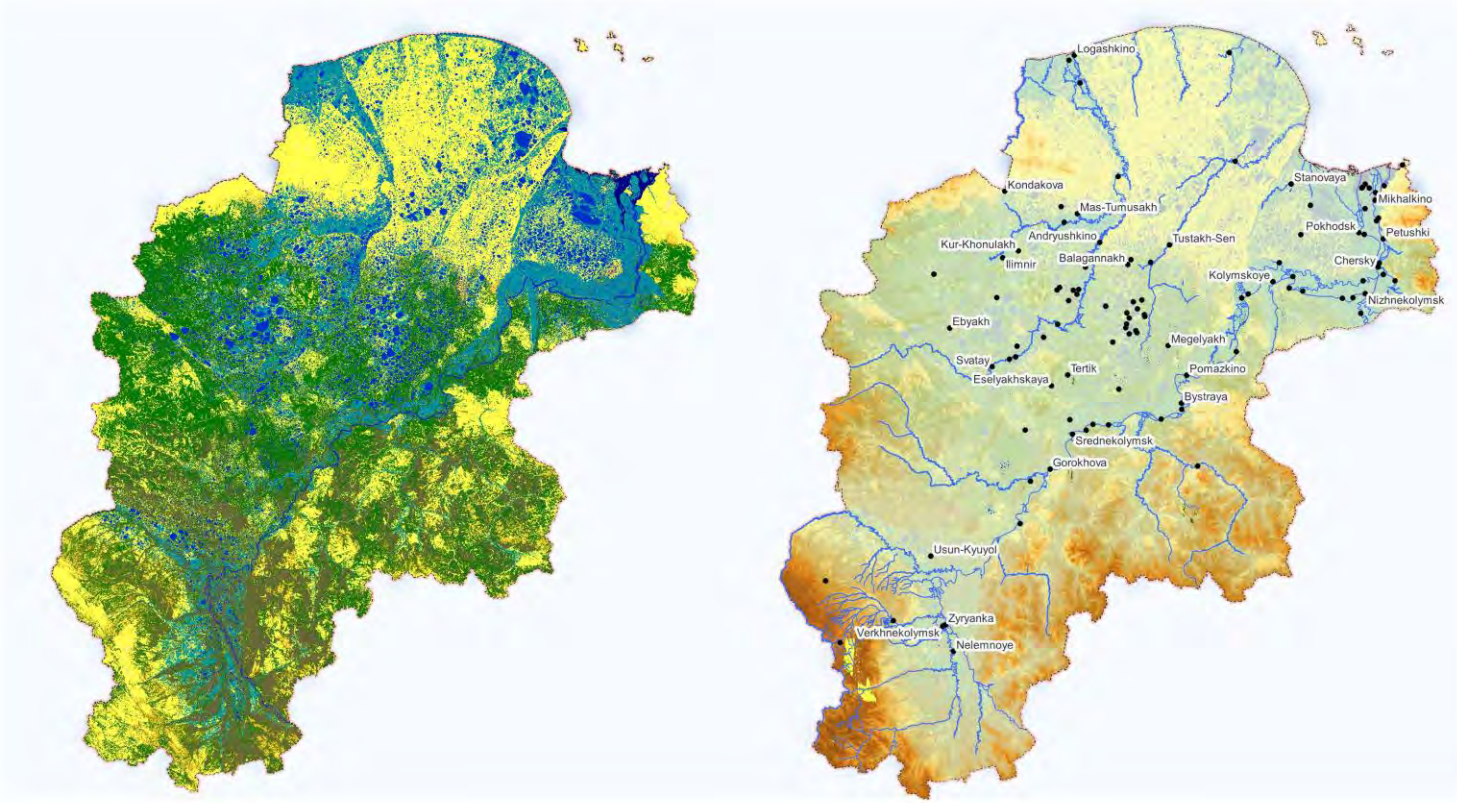
This paper is devoted to study the peculiarity of mountain's images in the northern culture in the text of the yakut heroic epic-olonkho "Nurgun Botur the Swift" and its representation in contemporary culture. The research approach is based on comprehensive study of different discourse: the epic text, the ethnographic data about space representation for northern people in their collective memory, as well the concept of choice of place for organisation of cultural activities in the republic, including some ones aimed to promote the tourism.

In 40th of the 19th century Middendorf recorded the Yakut myth that the Aiyy God created the earth beautiful and smooth but the evil spirit Abaahy trampled down and scratched it. The results of his acts stayed in the shape of lakes, rivers and mountains. In cosmological system of Yakut epic mountain is a vertical locus not connected with earth and heaven, top and bottom that define its dual mythological nature: sacral and demonic. Functionally it is a prison for three criminals and is guarded by three dead warriors assigned by Gods of Fate from the Upper World.

Three different places of mountain are chosen for analysis: the mountain in the place Orto Doydu in central region, sacred place for national holyday of solstice celebration, and the mountain of Kisilyakh in Verkhoyansk region, Pole of Cold in the North of Yakutia, considered as "place of power", the place where the "Olympic flame" is lit for International Sport Games "Children of Asia", hosted by Republic of Sakha (Yakutia) since 1996, and the mountain "Sopka liubvi" (The Hill of Love) integrated in the urban landscape and tourism promotion.

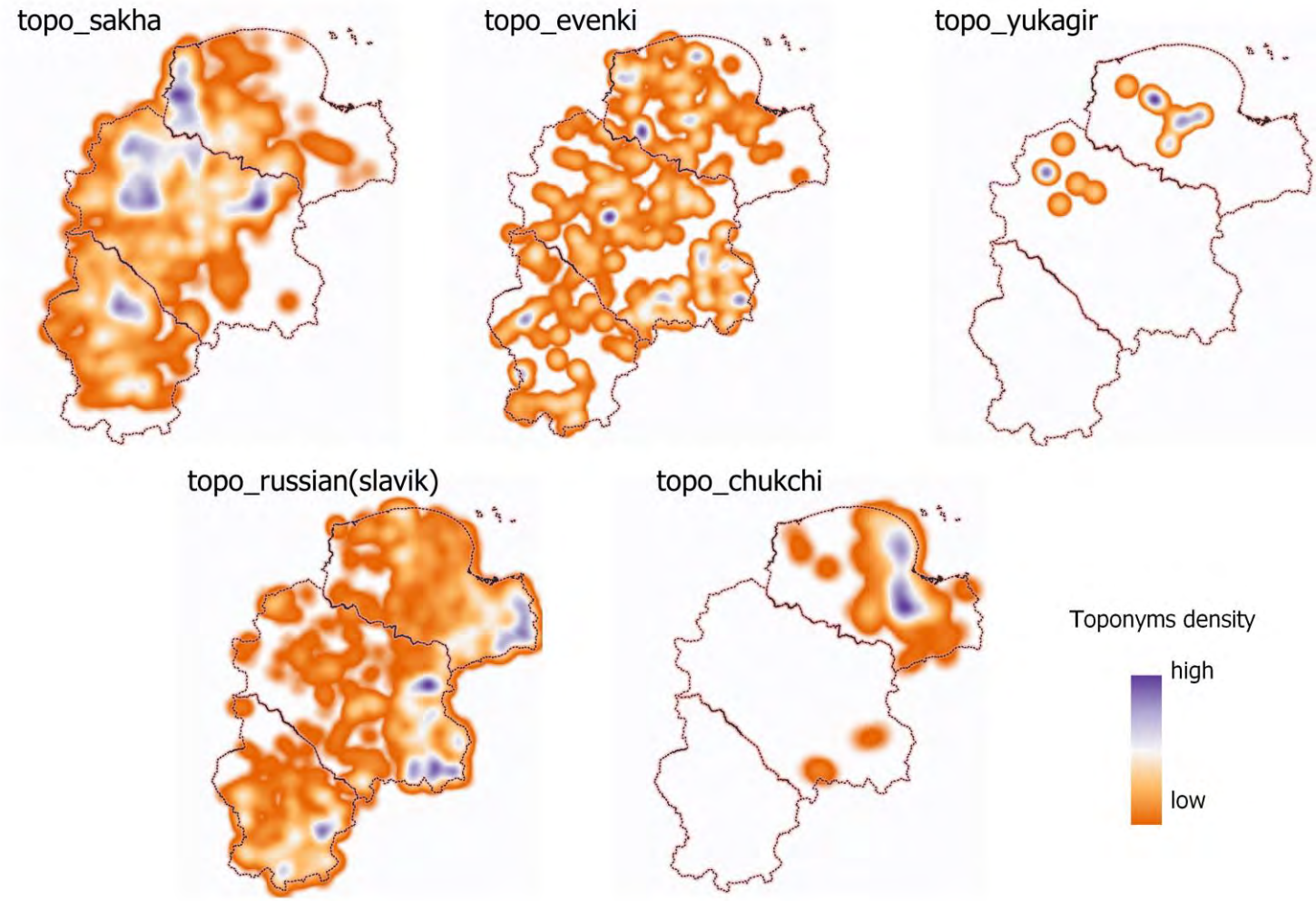
Keywords: landscape, mountain, sacred place, traditional culture.

LIENS TOPONYMES, LANGUES, ET REPARTITION SPATIALE
EXEMPLE DE LA KOLYMA



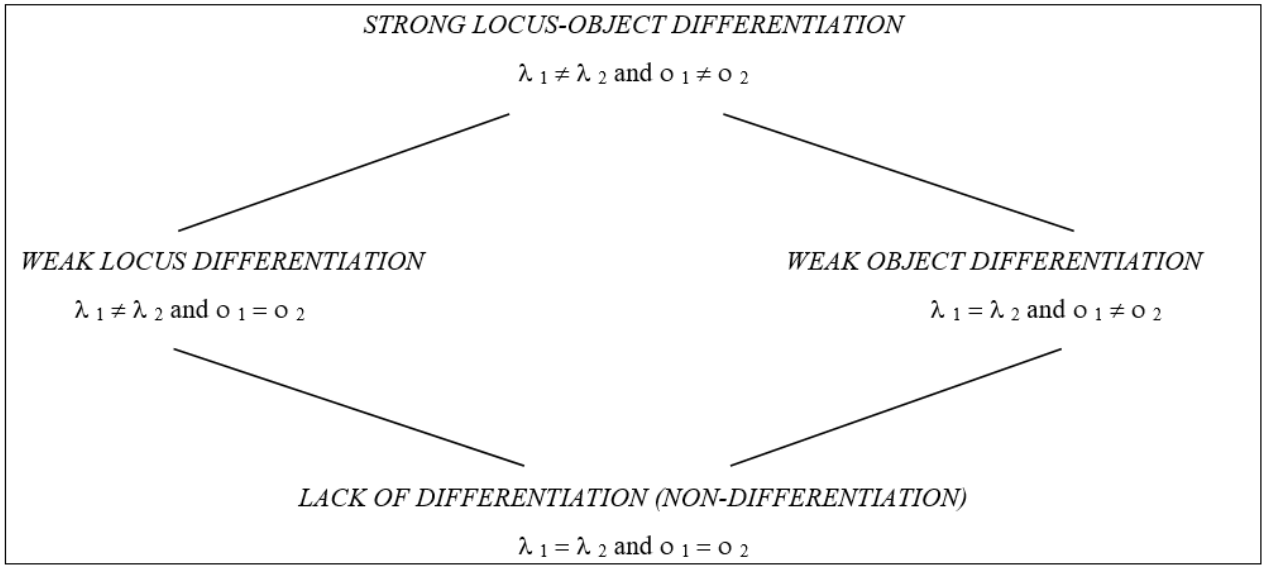
Moisei Zakharov, Sébastien Gadal, RSF 15-18-20047, Landscape ontology: semantics, semiotics, and geographic modeling, 2015-2025.

LIENS TOPONYMES, LANGUES, ET REPARTITION SPATIALE



Moisei Zakharov, Sébastien Gadal, RSF 15-18-20047, Landscape ontology: semantics, semiotics, and geographic modeling, 2015-2025.

LIEUX, OBJETS, ET GEOLOCALISATIONS



A spatial entity is definite as geographic if it contains only two-two differentiated couples, $\langle \lambda_1 , o_1 \rangle$ and $\langle \lambda_2 , o_2 \rangle$ are two couples of the envisaged entity, then $\lambda_1 \neq \lambda_2$ and $o_1 \neq o_2$. *In other words, on the Earth, any relation between two differentiated locus-object couples is, by definition, geographic.*

A spatial entity is definite as cartographic if it contains only two-two semi differentiated couples, $\langle \lambda_1 , o_1 \rangle$ and $\langle \lambda_2 , o_2 \rangle$ are two couples of the envisaged entity, then $\lambda_1 \neq \lambda_2$ but $o_1 = o_2$ or $\lambda_1 = \lambda_2$ but $o_1 \neq o_2$. *In other words, on the Earth, any relation between two semi differentiated locus-object couples is, by definition, cartographic.*

If the Earth = T, departure entity of the geographies, is definite as a Whole, then one can give in T the status of set formed by the Part G of the Cartesian product Pc among which the locus and the object are not undifferentiated: $G \subset \Lambda \times O$. *There is no uniqueness in the choice of G but this difficulty is assumed by setting G as wide as possible.*

nd geomap.

aphic differentiation.

ented objects are material or immaterial: for example, the culture of the peculation on the stock exchange on the harvests…etc. Each of these ace of the Earth, *object* can't exist without locus. However, the same nd even several objects in the same object. So, on the quay of a port, a localization, can contain several types of objects which have obviously The localization of every object is connected so indissociably to the each of the objects. The information found in every localization should is different from the others) and, besides, spatially differentiated (in the both spellings "différenciation" and "differentiation" are possible, they nguish the "general differentiation" of the "geographic differentiation", t. Finally, one can conceive a locus without any object: the *empty locus*. rtography because it allows to work with localizations which give no cts. Consequently, on a paper or on a computer screen with localization localizations which are quite equivalent.

geographies is the Earth; all the macroscopic objects measured in the various scales can be geographic objects. The both initial Whole/Part set logic are:

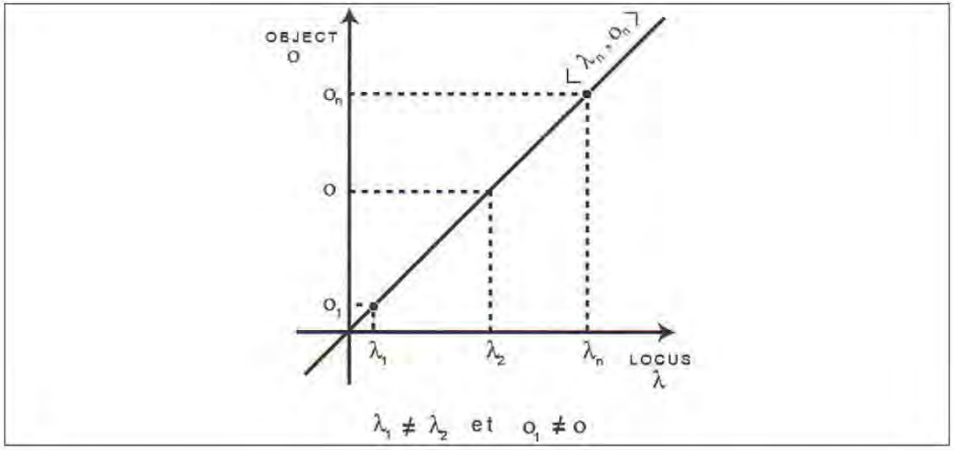
"… Λ a *finished set* of loci and O *a finished set* of objects on the Earth …"

The *Cartesian product*: $Pc = \Lambda \times O$ is the orderly couples set $p = \langle \lambda \times o \rangle$ where λ belongs in Λ and o belongs in O. A spatial entity is any part of the product $Pc = \Lambda \times O$. Two couples $p_1 = \langle \lambda_1 \times o_1 \rangle$ and $p_2 = \langle \lambda_2 \times o_2 \rangle$ are different and one writes: $p_1 \neq p_2$, if there is a differentiation (written with one t) of at least one of their constituents, the locus or the object. The treated information concerns so, that is the object, or the locus. Four cases can appear for the couple: < locus = λ, object = o >.

Sébastien Gadal, Georges Nicolas. Locus-object semantics in digital cartography. Konecny M., Friedmannova L., Golan J., Kolar M. GI in Europe: Integrative, Interoperable, Interactive, Joint research centre, European commission, pp.574-584, 2001, 8021025794 9788021025790. ⟨hal-01438189⟩

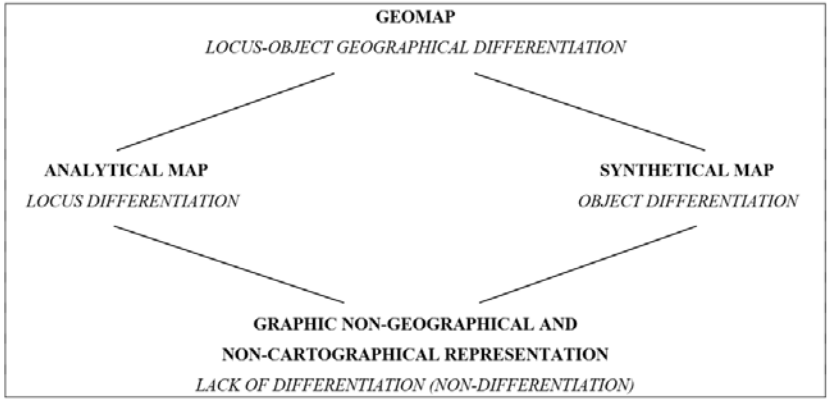
LIEUX, OBJETS, ET GEOLOCALISATIONS

Differentiation by the geographic product (figure 2).



If a geographic locus-object is not directly perceptible one can substitute it by one of the recording properties, for example, the wavelength. If this property is common to numerous different locus-objects one can so substitute these locus-objects by their properties by an operation of "metonymy". It is about a word by which one expresses the "locus-object" concept by "wavelength" term means which indicates then locus-object to which it is connected by a necessary relation of differentiation. The effective Cartesian product × part for T considered as the Earth means considering the couples $\langle \lambda_1, o_1 \rangle, \langle \lambda_2, o_2 \rangle$ where $\lambda_1 \neq \lambda_2$ with $o_1 = o_2$. From the "distance" point of view, the geodesic is reducible in the cartographic (as the example of the differences of wavelength confirms it) and consequently the problems of the cartographic distance (between locus) and those concerning the geodesic distance can be treated in the same way. Also, "metonymy" is usually used to substitute a geographic locus-object which is not directly noticeable by an object the properties of which are saves. For example, locus can be locus by localizations in which are saved multiple statistical data. These data are then considered as "commons" with numerous different locus-objects linked by a necessary relation of differentiation. The effective Cartesian product × part for T considered as the Earth means then considering the couples $\langle \lambda_1, o_1 \rangle, \langle \lambda_2, o_2 \rangle$ where $o_1 \neq o_2$ with $\lambda_1 = \lambda_2$. As first, from the "distance" point of view, geodesic is reducible in the cartographic (as the differences of wavelength confirms it). Consequently, the problems of the cartographic distance (between locus) and those concerning the geodesic distance can be treated in the same way.

Geomaps and maps (figure 4).



Sébastien Gadal. Le lieu objet urbain, une singularité morphogénétique ? . ThéoQuant 2001, 2001. ⟨hal-01782199⟩

Sébastien Gadal, Georges Nicolas. Locus-object semantics in digital cartography. Konecny M., Friedmannova L., Golan J., Kolar M. GI in Europe: Integrative, Interoperable, Interactive, Joint research centre, European commission, pp.574-584, 2001, 8021025794 9788021025790. ⟨hal-01438189⟩

Sébastien Gadal, Georges Nicolas. Locus: Fourth dimension of the geomap. Stephan Winter. Geographical Domain and Geographical Information Systems, 19, Technical University Vienna, pp.41-45, 2000, Geographical Domain and Geographical Information Systems 3-901716-20-3. ⟨hal-01419179⟩

LIEUX, OBJETS, ET GEOLOCALISATIONS

Whole-Part Rules

The first Whole-Part rule is the Rule of Spatial Relation (RSR). The surface of the Earth as a whole can be divided into parts that are in spatial relation. Parts, distinct from each other, can be either very spatially disjointed or overlap. The "spatial relation" operation between the parts and the whole is either a partition or a more general decomposition according to the precise or fuzzy nature property considered. The case "totally spatially disjoint" corresponds to specific differentiations leading to disjointed parts two by two.

The second rule, the Rule of Equivalence (ER) and the third, the Rule of Spatial Sum (SSR) express the fact that Whole-Part logic applies not only to the primitive whole (Earth) but also to each later whole. Any part can be posed to be equivalent to a whole. Wholes obtained by the use of ER can be subdivided in parts. These wholes have the same spatial properties as the original whole (the Earth). The Rule of Equivalence (ER) expresses the fact that Whole-Part logic applies not only to primary whole (Earth) but also at each subsequent whole.

a fourth rule, which introduces the comprehension of the infinite richness of geographic spaces, the rule of equivalence by the SSR spatial sum. It primarily acts to connect parts between them, to make the "spatial sum," and to make the latter like a whole of it. Thus, the spatial sum of the land, water and the relief, makes it possible to understand the climates, either by taking only the ancient division of the terrestrial atmosphere by the only given zones of latitudes (climate equatorial, tropical, moderated, and Arctic) into consideration, while trying to define them in the complexity of the maritime, continental, mountain distributions inside each zone and in the general information of World atmospheric circulation.

The fourth Whole-Part rule is the Rule of Equivalence by the Spatial Sum (RESS). Any spatial sum can be defined as a whole. All possible spatial combinations of spatial relations between components of a whole may constitute "totalities." Therefore, the same combination of spatial relations can correspond to several wholes (totalities).

For example, all throughout history, Whole-Part logic makes it possible to understand the various geopolitical designs of the spatial relations between Europe and Asia and to raise the

Table 1. Geographic and cartographic entities (from Georges Nicolas)

	1 Differentiated loci and objects	2 Differentiated loci Not differentiated objects	3 Differentiated objects Not differentiated loci
4 Differentiated loci and objects	Geomap 1 = 4 Geo-interpretation (locus without or with localization)	Map on Geomap 2 on 4 Analytical map of a geo-interpretation (locus and localization)	Map on Geomap 3 on 4 Synthetic map of a geo-interpretation (locus and localization)
5 Differentiated loci Not differentiated objects	Geomap on Map 1 on 5 Geo-interpretation confronted with an analytical map (locus and localization)	Analytical Map 2 = 5 Geometrization of locus to represent a same object in all the localizations (locus = localization)	-
6 Differentiated objects Not differentiated loci	Geomap and Map 1 on 6 Geo-interpretation confronted with a synthetic map (locus and localization)	-	Synthetic Map 3 = 6 Geometrization of loci to represent several differentiated objects with any localization (locus = localization)

and $p_2 = \langle \lambda_2 \times o_2 \rangle$ are different and one writes: $p_1 \neq p_2$, if there is a differentiation (written with a "t" in French) of at least one of their constituents, the locus or the object. The treated information concerns the object, or the locus. Four cases can appear for the couple: < locus = λ, object = o > (Nicolas & Marcus, 2003) (see Figure 1).

Geographic, Cartographic, and Earth Formalization

A spatial entity is defined as geographic if it contains only differentiated couples. If $\langle \lambda_1, o_1 \rangle$ and $\langle \lambda_2, o_2 \rangle$ are two couples of the envisaged entity, then $\lambda_1 \neq \lambda_2$ and $o_1 \neq o_2$. *In other words, on the Earth, any relation between two differentiated locus-object couples is, by extension, geographic.*

A spatial entity is defined as cartographic if it contains only semi-differentiated couples. If $\langle \lambda_1, o_1 \rangle$ and $\langle \lambda_2, o_2 \rangle$ are two couples of the envisaged entity, then $\lambda_1 \neq \lambda_2$ but $o_1 = o_2$, or $\lambda_1 = \lambda_2$ but $o_1 \neq o_2$. *In other words, on the Earth, any relation between two semi-differentiated locus-object couples is, by extension, cartographic.*

If the Earth = T, departure entity of the geographies is defined as a whole; then one can give T the status of set formed by the part G of the Cartesian product Pc among which the locus and the object is not undifferentiated: $G \subset \Lambda \times O$. *There is no uniqueness in the choice of G but this difficulty is assumed by setting G as wide as possible.*

Differentiation Formalization by the Geographic Product

The geographic product ⊕ is the limitation of the Cartesian product × in the orderly and differentiated couples among which the locus and the object have the same index.

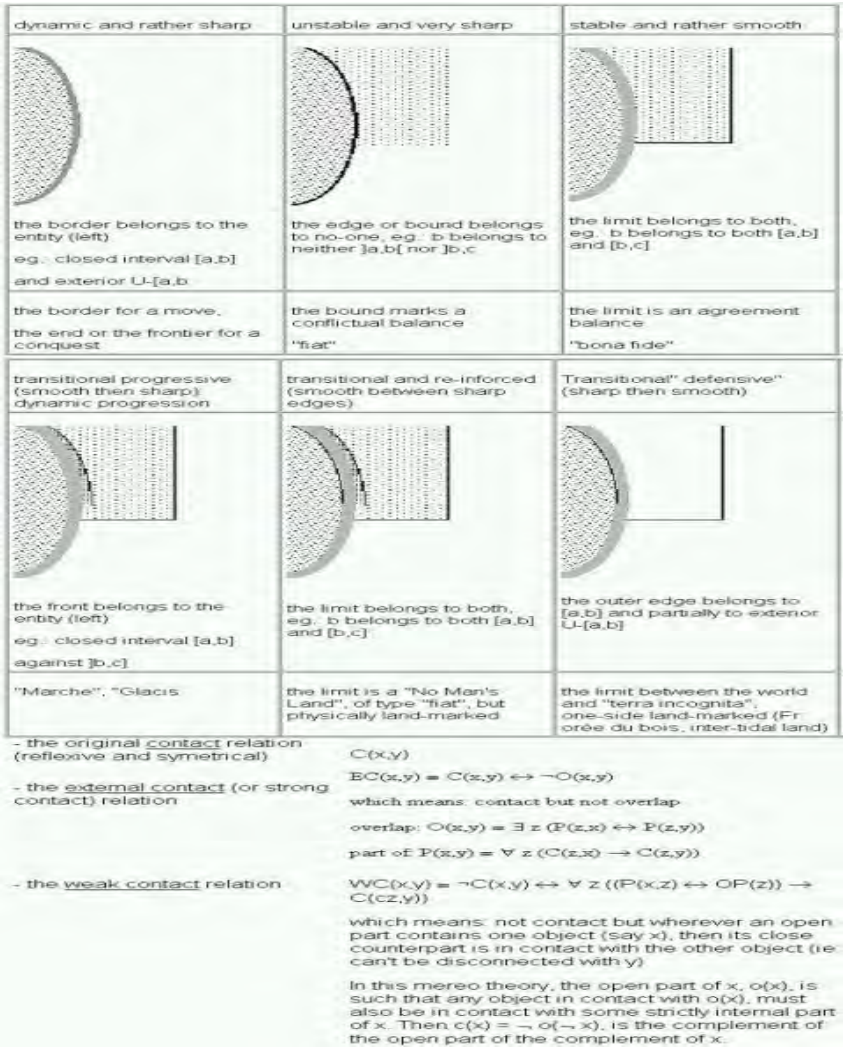
$$\{\langle \lambda_1, o_1 \rangle, \langle \lambda_2, o_2 \rangle, \ldots, \langle \lambda_v, o_v \rangle\} = \{\gamma_1, \gamma_2, \ldots, \gamma_v\},$$

where $\langle \lambda_v, o_v \rangle = \gamma_v$.

A whole is, by definition, a geographic entity formed by a set of loci-object couples of the terms of which have the same index.

Sébastien Gadal. Geographic Space Ontology, Locus-Object, and Spatial Data Representation Semantic Theory. Tomaz Podobnikar, Marjan Čeh Universal Ontology of Geographic Space: Semantic Enrichment for Spatial Data, IGI Global, pp.28-52, 2012, 9786-1-4666-032-27-1. ⟨10.4018/978-1-4666-0327-1.ch002⟩. ⟨hal-01419271⟩

FRONTIERES, LIMITES, LIEUX, ET OBJETS



		[Asher-Vieu]	[Smith-Varzi]	[Tao-Molenaar]	[Gadal]
Border	[A] vs complement	Weak contact	?	C-F	?
Frontier	A/B (no size)	Strong contact	Fiat	C-C (?)	political
Limit	[A] vs. [B]	Change granularity	Bona fide	F-F	Structural (?)

end	limit area of a spatial organisation
bound	end of a geographical object
frontier	separated zone between two geographical objects, in e.g. a no man's land
limit	stacked frontier between two geographical objects
orée	frontier or limit degrees of interactions and interrelations between the geographical objects

Sébastien Gadal, Robert Jeansoulin. Borders, frontiers and limits: Some computational concepts beyond words. Cybergeo : Revue européenne de géographie / European journal of geography, 2000, 125, ⟨10.4000/cybergeo.4349⟩. ⟨hal-01419229⟩

CONSTRUIRE DE LA CONNAISSANCE GEOGRAPHIQUE

- Positionnement dans une géographie classique dont le différentiel tient aux progrès technologiques dans les méthodes de collectes, d'analyse, d'interprétation (conceptuelle), de formalisation (graphiques, cartographiques, etc.).

- Objet qui permet de lier cultures, empreintes territoriales/territorialisations, perceptions/représentations, connaissances construites et formalisées de l'espace géographique : **les langues.**

ESSAIS DE CONCEPTUALISATIONS

Scientific Journal of Latvia University of Life Sciences and Technologies
Landscape Architecture and Art, Volume 15, Number 15

place, creating the place attachment are very important in this context. This involves the search for distinguished aesthetics, cultural literacy, participation and reconciliation. The challenge of preserving, actualizing and interpreting valuable regional landscapes in the increasing multicultural society can be distinguished as well [41]. New and constantly developing international aesthetic language of contemporary landscape architecture needs consideration in the context of cultural literacy too. Different and sometimes radical trends, such as vast artificial colourful surfaces, the use of recycled materials and objects, minimalist spaces or overgrown ecological spaces with wild grasses can be accepted quite differently by the representatives of different cultures both in different cultural and multicultural contexts. This challenge can be further expanded to the search for the aesthetic language for the sustainable, biophilic landscape architecture in different cultural and multicultural contexts. It will be successful only if culturally acceptable.

Today's technological capacities of integration and analysis of huge amount of data allow to understand the influence of cultural differences on landscape perception, to evaluate it and to integrate it into landscape design and planning. Remote sensing approaches mapping land surfaces characterising the different landscapes and the footprints of the processes of territorialisation reflect the interaction of human culture, economics, development and planning policies, architecture and natural environment. The perception's cartographies of people in geographic information systems (GIS) merged with landscapes mapped by

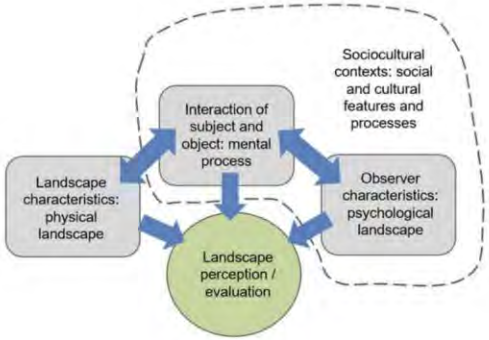


Fig. 1. The theoretical model of landscape perception/evaluation process

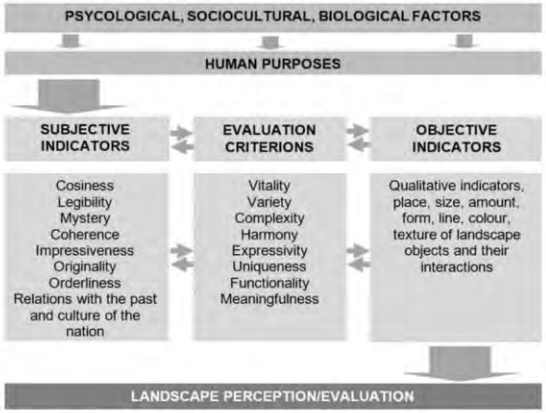


Fig. 2. The place of sociocultural factors in the theoretical framework of landscape perception/evaluation

this is not allowed in the multicultural landscape perception analysis (Fig.1).

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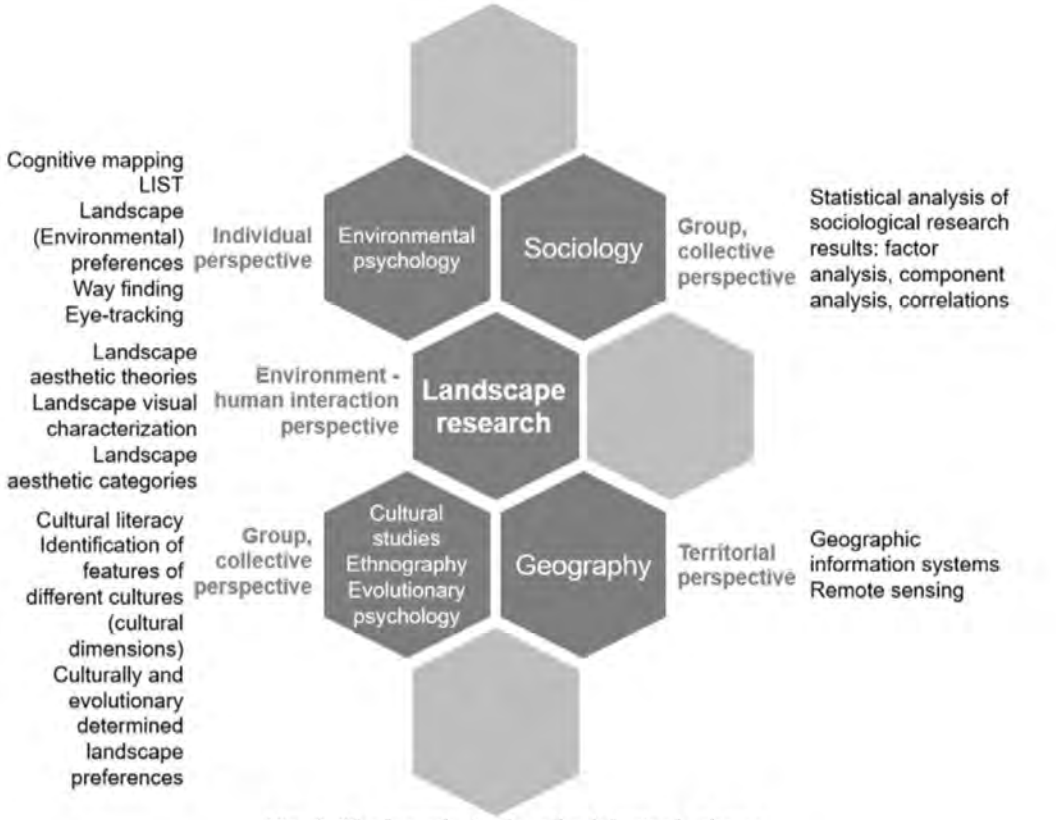

Fig. 3. The hypothetical methodological scheme of interdisciplinary evaluation of cultural differences in landscape perception

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LIENS ENTRE SEMANTIQUE ET TYPES DE PAYSAGES

LANDSCAPE TOPONYMIC MAPS: INTERDISCIPLINARY APPROACH (EXAMPLE OF SAKHA REPUBLIC, RUSSIA)

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Abstract
The research project "Landscape ontology: semantics, semiotics, and geographic modelling" (№ 15-18-20047) funded by the Russian Science Foundation aims to identify and understand the space through the lens of landscape ontology analysis, based on interdisciplinary approach. Nature of the North and the Arctic zone of Russia is not only the result of the natural evolution of the landscape, but also of the anthropisation over a long historical period. On the background of the development of the North and the Arctic territories of particular relevance is the experience of human-nature interaction and co-evolution. The significance of the project is driven by the inter and multidisciplinary approaches to the study of landscape, namely the widespread use of methods applied both in natural sciences (geography, physics, computer science, space technologies) and liberal arts (linguistics, folklore studies, semiotics, sociology, ethnography, archaeology, history, etc.).

Keywords: landscapes, toponyms, toponymic maps, semantics, remote sensing, indigenous cultures

INTRODUCTION

A comprehensive study of the landscape ontology, features of modelling and exploring landscapes typical of northern ethnic groups, the conceptual understanding of the landscape and its representation in culture will be held in the light of technological advances, namely with the use of geospatial technology as geographic information system, remotely sensing of the landscape. One of the areas of the research, aimed at a multipurpose study of the local spaces representation, is to use satellite images for creating landscape toponymic maps. Toponymic glossaries due to the human activities is one of the most important components to study of semantics and semiotics of the nomination of landscapes in the languages of indigenous peoples of the North-East of Russia, providing the ability to compare different representations of the geographic space, to identify the dynamics of change in the imaginary, perception, representation and use of the surrounding landscape. Remote sensing data processing methods analyse, and figure the structures and forms of landscapes resulting of the human and environmental interactions along the history.

Geographical terminology due to its active use in business and daily activities is one of the most important components of dialect vocabulary. The study of semantics and semiotics of the nomination of landscapes in the languages of indigenous peoples of the North-East of Russia (on case of Yakutia) provides the ability to compare different representations of the natural world, to identify the dynamics of change in the vision,

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Scientific Journal of Latvia University of Life Sciences and Technologies
Landscape Architecture and Art, Volume 15, Number 15
DOI: 10.22616/j.landarchart.2019.15.07

Role of Multicultural Identity in Landscape Perception and Methodological Possibilities of Its Interdisciplinary Analysis

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Abstract. The paper presents the overview and comparative analysis of landscape cross-cultural and sub-cultural perception research methodologies in order to develop hypothetical methodological framework of interdisciplinary evaluation of cultural differences in landscape perception. The landscape research methods used for the analysis of impact of socio-cultural factors on landscape perception can be classified as mix of psychophysical and cognitive approach and are mostly based on the statistical analysis of the results of sociological research. Drawing the research closer to the relational concept, we propose the hypothetical methodological scheme of interdisciplinary evaluation of cultural differences in landscape perception that integrates landscape research with the knowledge of cultural studies, quantitative sociology (statistical analysis of the results of sociological research: factor analysis, component analysis, correlations, etc.), environmental psychology (cognitive mapping, Landseape Image Sketching Technique, landseape and environmental preferences, way finding, eye-tracking, etc.), and geography (geomatic) (geographic information systems, remote sensing).

Keywords: landscape perception, identity, interdisciplinarity, multiculturalism

Introduction

Landscape as a social construct and process ongoing in time and space is constantly changing and due to that it can be considered as an objectively existing dynamic territorial system that is continually re-evaluated by different individuals (subjects). Regarding to ambiguous cultural, technological, social, etc. aspects of globalization, landscape perceivers/assessors are and will be the members of growing multicultural community. The preferences of each perceiver/assessor in terms of landscape are determined not only by psychological, individual, but also by socio-cultural factors, which are decisive for cultural identity. The relevance of the issue is also supported by European Landscape Convention [10] that defines landscape as an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity.

Cultural differences evaluating landscape are widely analysed in research articles [6; 8; 15; 19; 28; 32; 38; 40; 43; 49; 50], thesis and graduation works of different levels [17; 27; 33; 39; 42], research projects, reports and guidelines [22; 31; 46]. The analysis of literature allows distinguishing several aspects of relevance of this research. Recent landscape ontology studies attempt to increase understanding and broaden knowledge about landscape as a social construct and objective reality (mapping the territory as integral natural-historical-cultural space) [22]. Regarding international tourism management, the increasing tourist flows, and diversity of visitors cause the challenges of landscape representation and interpretation for the visitors of different cultural contexts [31; 33; 46]. The arising new environments, that can be identified as multicultural spaces or, to say better, intercultural [52] spaces (for ex., office parks and buildings, indoor parks etc. that are used by the personnel of international corporations that employ people from different cultures) raise the questions, what are the environmental designs that are acceptable for the people of different cultures; how the multiculturalism/interculturalism is expressed in landscape design. Cultural literacy [52] in landscape design and management becomes of crucial importance as the landscape architect or the team of architects from one cultural context working in another strongly different cultural context nowadays is everyday reality. Another aspect related with multiculturalism and landscape architecture are the global migration and contemporary multicultural cities [1-4]. Such cities require public spaces acceptable and comfortable for their diverse population [17; 34; 52; 54]. Moreover, the public spaces honouring specific cultures or engaging the previously marginalized groups and both acceptable for general population are now a challenge of landscape design [53]. Sense of belonging to the

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Olga Lavrenova

Spaces and Meanings: Semantics of the Cultural Landscape

Springer

DOI: 10.1007/978-3-030-15168-3 Olga Lavrenova

Introduction

The problem of the relationship of culture and space, spatial characteristics of culture, is an area of constant interest of both, natural sciences and the humanities. Within the divergent studies of culture, in the context of noosphere reality, the culturally created meanings of the geographic space and landscape become gradually significant.

The culture is re-structuring its dwelling space, and the ideas of the environment are being transformed into a symbol system. The area of direct contact of culture and the geographic space presents the semiosphere layer with signs expressed by toponyms, hydronyms and geographic objects proper. These signs form complex polyvalent relations applicable to basic laws of semiotics and semiology. Processes of referential filling of such signs, and their relationship within the system have not been yet sufficiently studied in cultural and philosophic discourse.

The sign system created by culture as a result of reflecting on the containing landscape is genetically linked to the basic patterns and cultural codes. Archetypes and symbols on which the cosmogony and the world image are constructed keep their own pattern on the earth surface, and still there is no consensus on what is primary and what is secondary, i.e. comprehension of space as a category, or rather as a set of specific realities of a landscape. In cultural philosophy and culture, we still have not obtained a clearly developed system of signs and methods to determine the character and genesis of such interactions. Hence, research in this direction becomes very important now, as an attempt to bring different approaches and methods in the field of spatial semantics to a single system. It seems reasonable to suggest a synthetic approach to the problem study, based on different scientific discourses research, which can be similarly applied to the humanities and natural sciences research for the cultural landscape phenomenon study.

Cultural landscape is a phenomenon within the semiosphere section where cultural sign systems appear to be directly connected with the geographic space in general as well as with its separate objects in particular.

Hence, it is possible to raise the problem of cultural landscape study as a sign system, the problem of semantics of the cultural landscape. The study of this problem brings a whole array of separate studies on geography of spiritual culture, philosophic and cultural research in the field of geographic images and concepts as a cultural phenomenon to a new methodological level.

In the humanities, the problem of interaction of culture and space has been primarily studied in linguistic and anthropological discourses not considering the cultural landscape phenomenon in its integrity. Similarly, the goal of defining signs genetically connected with geographic objects into a separate system with an 'intertext' potential and, simultaneously, a restricted degree of interpretation freedom due to geographical constants has not been set yet.

The problem of modeling of geographic images recently inserted into cultural studies allows researching the interaction of culture and space on a new methodological level within phenomenology and cultural approach. Comprehension of space within the cultural context, study of cultural landscape

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semiotics lead to a new understanding of its organization, morphology, and give way to new opportunities in modeling geocultural interactions. Setting the problem of cultural landscape semantics allows reaching the next level of theorizing, from modeling geographical images to reading the spatial 'text'.

In this study we undertake the next step in theorizing the problem of interaction of culture and space, in understanding not as much the cultural reflection on space resulting in created images but more the substantiality of geocultural reality presented as a cultural landscape.

It is the comprehension of culture being, in contemporary cultural anthropology, as a method of producing the meaning, senses and symbols, their expansion and fixing (Max Weber, Clifford Geertz), which is taken as a basic working theory. The being of culture in a geographic space is inseparable from the process of symbolizing the environment (in its abstract, cosmic, or geographic aspects), essential to a human consciousness. Understanding of space has many levels, from associative to sacred. As a result, sustainable views on geographic objects and sustainable culturally significant symbols, with different degrees of spatial connotations, are being formed. Culture, being a universal object of semiotics, is studied in this research as a subject of semiotizing of geographical space expressed in inherited and constantly resuming 'framework' that originates as a result of this continuous process, with its sources in far antique eras. According to contemporary anthropology claims, comprehension of space in antique cultures is similar to its developing, physical ungoverned 'wild' environment that turns into a sign, gains its fixed place in the world picture, yields to control on a sense level. The same semiotic processes can be defined in modern cultures.

Geographic objects and/or toponyms become metaphors, symbols, signs in case when there are sustainable cultural associations with particular historic events, artifacts and unique characters in a natural landscape. This flexible in the meaningful area and latent sign system continually owes its constant 'reapers', i.e. specific geographic objects. That is why we can claim that geographic space is inseparable from images and symbols created by culture, that gain characteristics of an integrated system which can be considered a geocultural space.

National, regional, local cultures are more or less explicated in a cultural landscape of an appropriate territorial level. Geocultural space is regarded to be a set of particular information and territorial 'clusters', cultural landscapes of different taxonomic range (from urban to national cultural landscape). This notion as well as the notion of 'culture' has many interpretations, including even polar ones, in the humanities and natural sciences.

The cultural landscape differently interpreted in different discourse, in this particular work, is being studied as a dynamic unity of geographic space and human activity in any of its possible expression.

Information within the space and about the space that appears in the process of cultural activities will be studied as a component of the semiosphere and semiotic system in which majority of semiotic laws is respected. In this system, sign forms are geographic objects and toponyms per se. In such sign system, separate geographic objects and/or their toponyms designate particular sense categories and

Definitions

This work studies correlation of meanings of 'culture', 'space' and 'landscape, 'geocultural space' and 'cultural space'.

The question of correlation of abstract physical space and geographic space is not taken into consideration in a landscape that 'not only expands itself in a space but also inherits many of its principal properties and characteristics. However, the space itself can be clearly perceptive, become sensible by means of the landscape. Its elements structured the terrestrial space shaping it into the primary form (Svirida, 2007: 11). The landscape is marked by such abstract categories of physical space as 'up/down', 'horizontal/vertical', 'boundless/limited'.

We will not suggest here any new definitions for a landscape and space but distinguish the following:

Geographic space is the quasi-two-dimensional space of the earth ground. It is characterized by insularity, positive curvature (camber), quasi factualness, anisotropy in the gravitational field of the Earth. Anisotropy of geospace is expressed in non-similarity of horizontal and vertical directions (vertical movement is considerably complicated), resulting in a spherical structure of the Earth, as well as (to a lesser extent) in non-equivalence in latitudinal and longitudinal directions which is manifested by latitudinal zoning. Distance measures may be regarded not the Cartesian distance, but also the time, or means to cover the distance (BSE).

Landscape is the main category of territorial division of geographical space, a particular territory homogeneous in origin and development history sharing the same geological basis, with similar type of terrain, hydrothermal conditions, soils, biocenosis, and natural set of morphological parts, faces and stows (Encyclopedia "ru.wikipedia").

The general view of a place, sometimes also referred to as a landscape, will be defined, in this study, by a French word *paysage*.

Containing landscape is a common territory of an ethnos habitat as a sustainable cultural and historical human unity, formed on the basis of tribal kinship, similar mundane culture including the language of communication, religious cult, norms of everyday behavior, etc.

DOI: 10.1007/978-3-030-15168-3 Olga Lavrenova

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Some **original author's definitions** of basic notions are presented here as well.

CULTURE, in this work, will be referred as a self-organizing system, with a set of semiosis characteristics and a related system of values and standards broadcast into time and determining the life of a specific territorial human community.

Territoriality, spatiality of culture we will note as a compulsory prescription not only because the culture is impossible without a geographical space, as well as a person without a body, but also because here we study the manifestations of culture directly related to its containing landscape, territorial and natural substrate on which it was born and is being developed. We assume the spatial concepts of culture per se to be important because, on the one hand, they come from the real experience of interaction between culture and space; while on the other hand, they influence perception and semiotizing of a particular landscape. Phenomenological and hermeneutic approaches may be used along with semiotic methods and approaches.

GEOCULTURAL SPACE is an information semantic form of cultural existence in a space featuring a global integrity, with eidetic, ideational, symbolic component which arises on the basis of close relation with physical and socio-geographic realities and exists there.

CULTURAL LANDSCAPE is defined as a cluster of geocultural space as a cultural phenomenon, with matrix system and cultural codes expressed in signs and symbols directly connected with a territory and/or manifested in some material expression; this system may be interpreted as a text in its wide cultural meaning.

By operating these notions we will build relations between them in order to pave the way towards the problem of cultural landscape semantics.

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Spaces and Meanings: Semantics of the Cultural Landscape

Springer

DOI: 10.1007/978-3-030-15168-3 Olga Lavrenova

LIENS ENTRE SEMIOLOGIE ET TYPES DE PAYSAGES

Indigenous place names: the cognitive-matrix analysis

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DOI: 10.18355/XL.2018.11.02.22

Abstract
The importance of this study is fueled by the attention the modern language researchers pay to the relationship between man and environment in a bid to identify the cognitive component of language phenomena. The purpose of the study lies in the comprehensive research into the toponyms (place names) of Central Yakutia using the cognitive-matrix modeling method for classifying the place names and identifying the underlying principles of their formation. The key method for studying this problem is the cognitive-matrix analysis of place names coupled with the statistical analysis method, the method of historical and geographic reconstruction, the systemic approach, the descriptive method and the GIS-mapping method. The authors have examined over 300 place names stored in the database of Khangalas Ulus in Central Yakutia. In the course of the study, the authors identified the cognitive-matrix schemas for the names of the places in the studied region. The method of cognitive modelling helped reveal the internal overlapping of the classes of components in the naming of basic geographic toponyms. This in turn led to their ambivalence. This overlapping of basic geographic toponyms (insulonyms, hydronyms, oikonyms, oronyms) has its specifics. The empirical evaluation of the place names in the studied region helped reveal the diachronic development of geographic situations, particular characteristics of landscape, hydrology, soil, vegetation, and wildlife, as well as re-enact historical events and remodel the population patterns across the territory which are related to the natural landscape. Every individual and the society as a whole evaluate the environment from the perspective of the favorable conditions and the location of the geographic objects in terms of farming. The authors discovered the perception of the world as seen by the Yakuts people through the prism of the landscape. The study also revealed the traditional system of orientation in space and the attitude to the surrounding world through the anthropocentric worldview. Man

Is the Reindeer Run Endless?
Narratives of the Northern Nomad

VANDA B. IGNATYEVA, EKATERINA N. ROMANOVA,
AND LIUDMILA S. ZAMORSHCHIKOVA

Abstract: This article presents an anthropological analysis of the relationship between landscape, culture, and identity of Indigenous Peoples of the North of Yakutia. The topic of the study is focused on an important marker and resource of identity that encompasses the landscapes of the North, its physical, geographical, natural, and climatic features, the integrated system of northern occupations and traditional practices—the domestic reindeer. This research also considers various cultural texts and personal and collective narratives of the "imagination" and "experience" of the cold space associated with reindeer in the construction and modern representations of the ethnicity of Indigenous Peoples of the North.

Keywords: asserting indigenous identities, domestic reindeer breeding, ethnicity, indigenous peoples, institutionalization, North, Yakutia

The Republic of Sakha (Yakutia) is the largest subject of the Russian Federation in terms of territory (more than 3 million square kilometers). It is located in the northeast of Eurasia; the entire continental part is located in the zone of continuous permafrost, and more than 40 per cent of the territory is above the Arctic Circle. This is the coldest region among the inhabited territories of the Earth, with both Verkhoiansk (minus 67.8°C in 1885) and Oimiakon (minus 71.2°C in 1926) claiming the title of the "pole of cold" of the Northern Hemisphere.

The territory of Yakutia is the area of traditional settlement for five Indigenous Peoples of the North: Evenki, Evens, Dolgans, Yukaghirs, and Chukchis. For the first Russian explorers of the seventeenth century, Peoples of the North were universally recognized and delimited as "reindeer people," in contrast to the "horse" Yakuts (Sakha). After the conquest of the Lena Territory, those "reindeer people," like other

Sibirica
doi: 10.3167/sib.2022.210305
Vol. 21, No. 3, Winter 2022: 71–96 © The Author(s)
ISSN 1361-7362 (Print) • ISSN 1476-6787 (Online)

Merci de votre attention

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