User's Manual

IVANHOE is an environment for textual interpretation, designed to foster critical awareness of the methods and perspectives through which students and scholars understand humanities documents. Perhaps most useful as a pedagogical tool, the online IVANHOE Playspace exposes the indeterminacy of humanities texts through role-play and performative intervention. As a *play* space, it encourages imaginative and often ludic approaches to the investigative process. It is a tool that can be (and has been) used with students as young as 12 years old as well as with advanced scholars.

While this documentation often refers to IVANHOE as a "game," it is important to understand that the concept has broader implications for humanities pedagogy and research, and that many modes of sophisticated, scholarly gamesmanship are possible in the IVANHOE environment. The "rules" of the game are up to its players and initiators. IVANHOE can foster both competitive and collaborative interaction, well suited to research and teaching.

No, really: what is IVANHOE? In simple terms, IVANHOE is a digital space in which players take on alternate identities in order to collaborate in expanding and making changes to a "discourse field," the documentary manifestation of a set of ideas.

System Requirements

To run the IVANHOE application, you need a modern CPU (Pentium IV, Apple G4, etc) with at least 256MB of RAM, and the Java Run Time Environment 1.4.2 or higher (such that it supports Java Web Start). (These technical matters are mentioned for those interested, but most likely your computer has all the software needed to play IVANHOE.)

IVANHOE also requires a continuous connection to the Internet.

The IVANHOE application has been tested on Windows XP, Linux and Apple/Macintosh computers. On the Apple platform, the latest version of Java requires Mac OS X 10.3 (Panther).

For the web-based login and game creation features, any modern web browser should work. It has been tested with Firefox/Mozilla, Safari and Internet Explorer 6 and 7.

Launching IVANHOE

You can start the application directly from our IVANHOE web page:

  http://www.patacriticism.org/ivanhoe

To see a list of current games, click on the "games" tab. If you have played in a game already it will be shown in the "My Games" section. Most recently played games and all past games are shown on the page as well. To begin playing, click the "play" link next the name of the game you wish to join. If you are not logged in you will be prompted to do so, or to create an account.

Playing a game will launch the Java desktop application and henceforth you will interact with the software outside of the web browser.

(On Mac platforms, this action will download a shortcut file to the desktop, from which IVANHOE can be launched in the future. We do, however, recommend returning to our website periodically to check for news and supplemental teaching materials. Windows and Linux platforms require a return to the website for each launch of IVANHOE.)

Create Your Account

Anyone can create an account from the "join" tab on the IVANHOE home page. We suggest that your username resemble your actual name. For example, *John Doe* might choose the username *jdoe*. The game permits you to participate under an alias to conceal your identity during play. The username is enabled for game play immediately after you complete the form.

Create Account

Account Setup

Account: jdoe

Password: •••••

Retype Password: •••••

Contact Information

First Name: John

Last Name: Doe

E-mail: john@doe.com

Affiliation: University of AnyTown

Signup »

Log In

After creating an account you may log in from the link in the upper right of the IVANHOE home page. From this point forward you can play in existing games or create new games.

Playspaces

Once you log in, you may either create a new game, as indicated, or choose to enter one of the available games in play. The screen will display a set of "My Games" (games in which you are a participant), "Recently Played Games", and "Archived Games". If you are not creating a new game, pick the game you wish to join from the list of available IVANHOE Playspaces. You may also, if you choose, logout from the top right of this page.

Recently Played Games

Games that have been recently played:

Zero (Non) Sum Game	Play
Ruskinny Dipping	Play
All the Way to the Tangled Bank	Play
Episcopal Orders	Play
Claude & Pebbles	Play

Initiating an IVANHOE Game

The following section contains practical setup instructions for game initiators and for game players. Suggested scenarios for classroom and research play are described elsewhere in this document.

Game Initiator Tasks

You must create an account and log in to IVANHOE as described above if you wish to initiate a new IVANHOE game.

Creating Games: From the "games" tab on the IVANHOE web site, click the "create new game" link. The following form will appear:

New Game

Game Title	My game title
Description	a brief description....

Here you can name your game and provide a brief description that will be shown on the web site and in the game space. You are also encouraged to enter any rules and pedagogical objectives dealing with roleplay you wish to communicate to your players. This information will appear inside the game, in each player's role journal (described below).

The game begins with no initial documents loaded. The game initiator may wish to act as the first mover or alternatively may leave the choice up to the players.

Restricting Games*:* By default, IVANHOE games are open to any player with a valid name and password. As game initiator, you may choose to limit your game to a particular set of players (for instance, to research partners or to students in a class), by clicking the "player access" checkbox at the bottom of form for creating a new game. A selection list appears, to which you can add players to your game from a list of all available player names. Use the arrow buttons to move names from one field to the other, or allow unrestricted access to your game by deselecting the checkbox.

Take care to make sure that your own account is among the list of players if you wish to create a restricted game to which you will also have access. You can revise this list at a later time.

The "Create" button will add your game to the list of all IVANHOE games. At this point, your work as a game initiator is over, and you may join your game as a regular player.

Player Tasks

Entering the Gamespace: Having logged in, press the "play" link in the list of games to enter the Playspace. As the game downloads to your computer, a small window appears asking you to validate the signature certificate. Click "Trust" three times.

A "Select a Role" window will appear. By default you will come in with a "public" role name, which is your login name. You will want to click the "create new role" tab in order to construct the mask, or "role", in which your game play will be executed. Fill in the role name, the role description, and the objectives you have in mind for choosing this role. (For further discussion of the function of role playing in IVANHOE see below, "Roles and Role Journals".)

Once you have chosen your game role, click the "use this role" button at the lower right. A large window will open, in which all IVANHOE gameplay takes place. A smaller "Welcome to Ivanhoe!" window will open above the basic gamespace verifying your identity in the game.
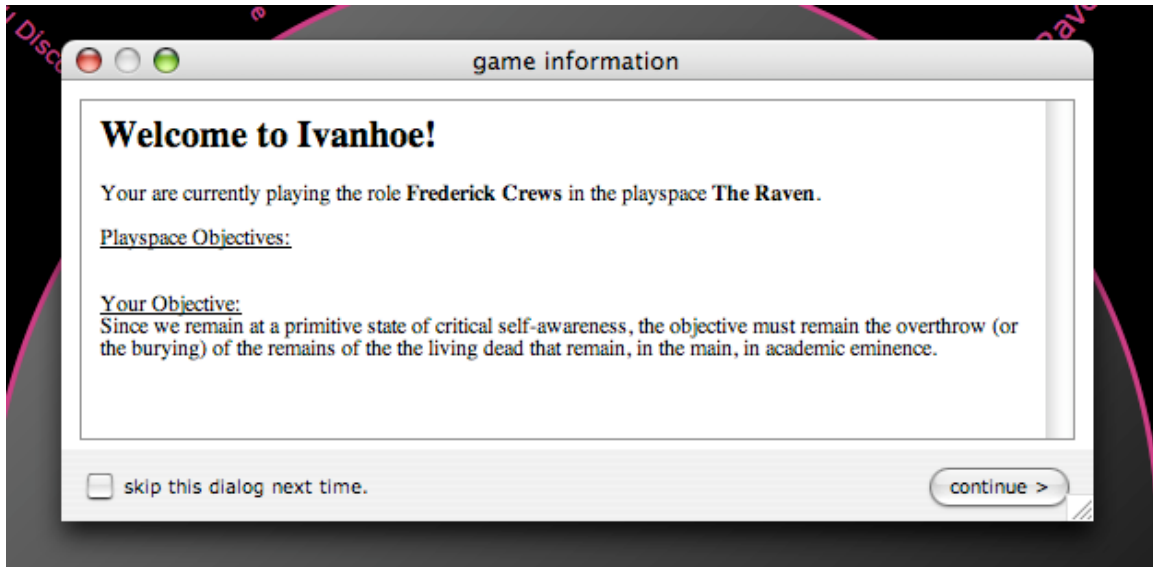
Click the "continue" button to enter the game. (Note that you can check this window at the lower left to prevent the welcome window from appearing again.) By default you will be taken to the current state of the game play.

This user's manual describes each interface element of the IVANHOE application (in sections below on understanding the visualizations – both the player/move visualization and the move stemma visualization, – understanding the discourse field, and using the timeline and move history). It also describes how to play the game in depth.

We suggest that you begin your gameplay with two basic setup tasks: starting your role journal and customizing your player color — but first, take a moment to get oriented to the key elements of the Playspace.
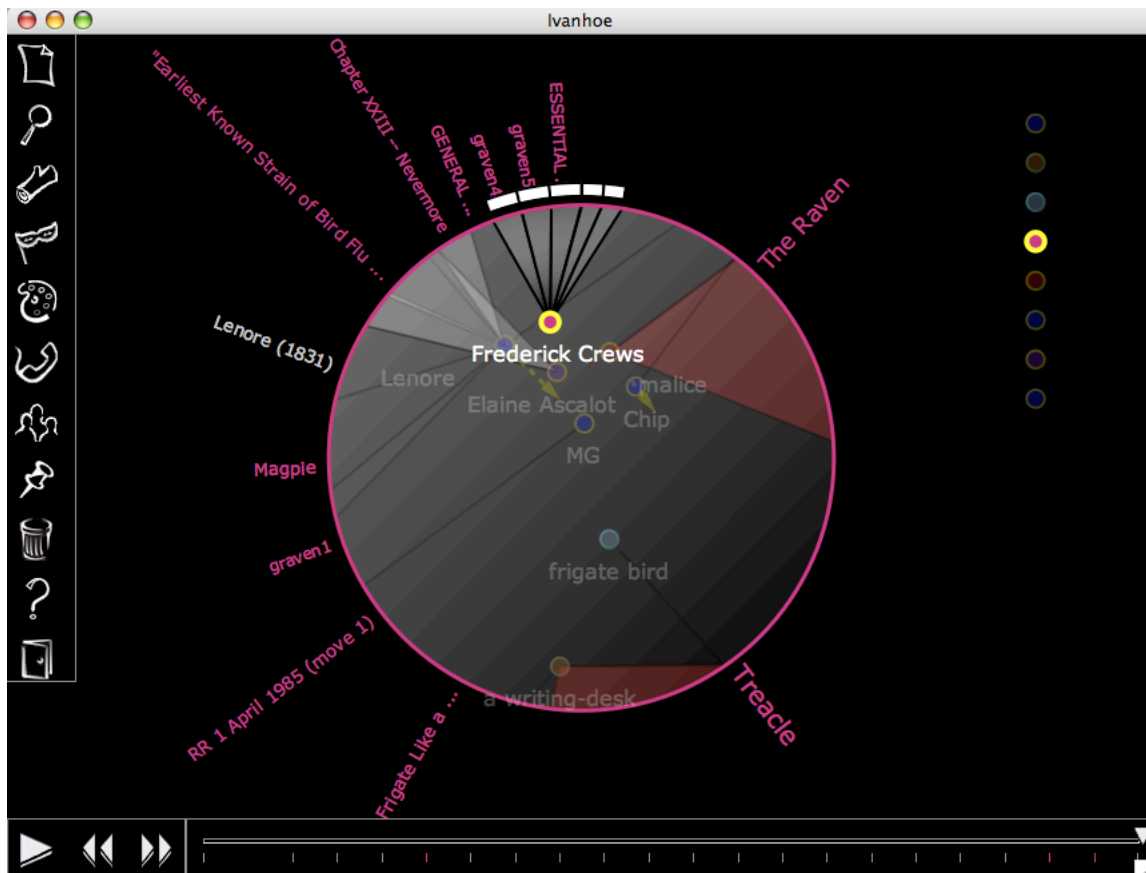
Basic Orientation: On the left side of the screen, you'll find a series of white icons through which you can access tools and perform actions. Rest your pointer on each icon briefly to see its name. On the right-hand side of the screen, you'll find a tray containing small circles which represent players who have made moves in the game. (If this tray is absent, you have the chance to make the first move!) At bottom is a timeline along which gameplay unfolds, together with some timeline control buttons. The central feature on the screen is a large circle. This represents the "discourse field" of your IVANHOE playspace. As documents are added in the course of gameplay, they will be arrayed in regions around this field. (Titles of the primary texts for your IVANHOE session should be visible now. You can click on any title or region to read its corresponding document.) And as players make moves, their player circles will appear and migrate within the larger circle. You may see some players already, along with extending rays that indicate the nature of their interactions with the texts.

It's important to realize that the Playspace always comes to your attention in the perspective of a specific player's role. By default you will see the Playspace from your own role's point of view. If you click one of the other player's circles in the tray at the upper right, however, you will see the Playspace shift slightly – colors will change and different parts of the field will get emphasized. See below, *Player Circles* and *Color Options*, for further details.
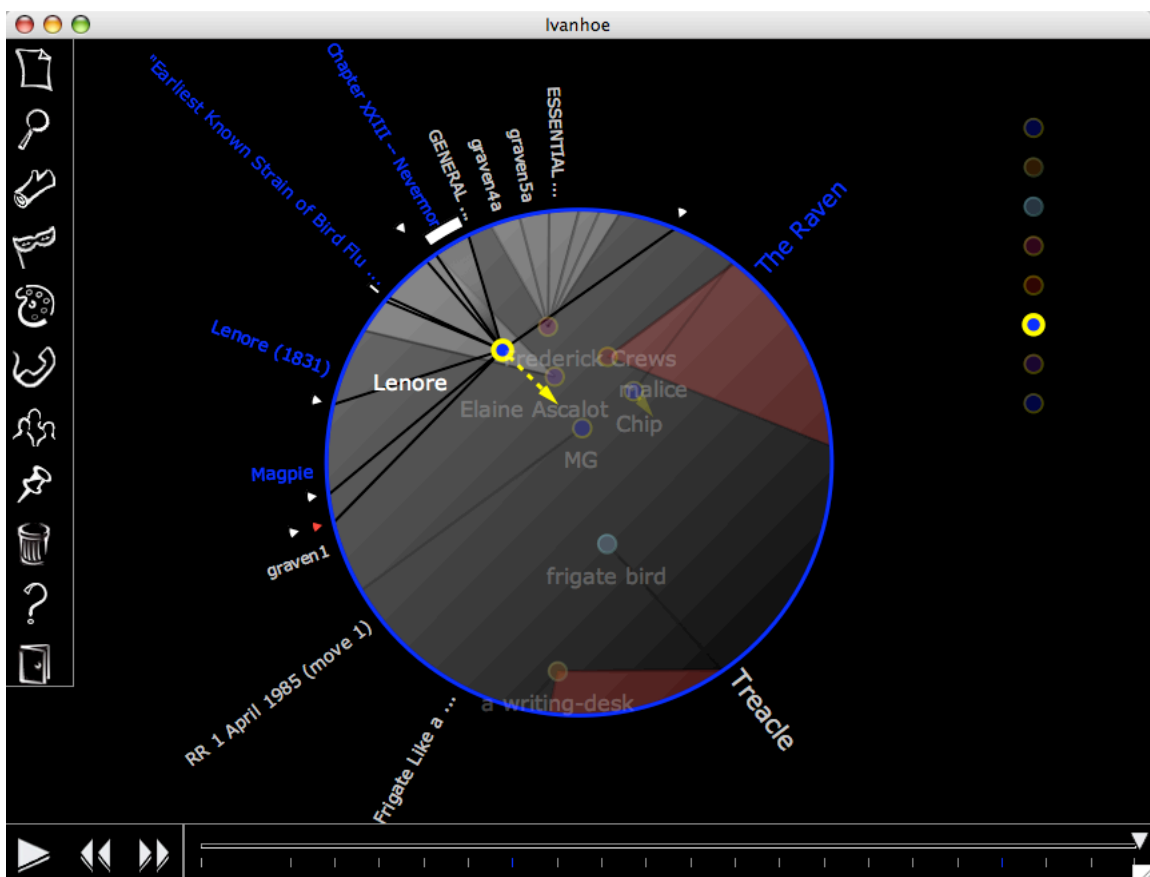
Role Journals

As a first step, access your role journal through the mask icon on the lefthand side of the screen. A window opens in which you can record information about your chosen interpretive perspective and make notes during the course of gameplay.
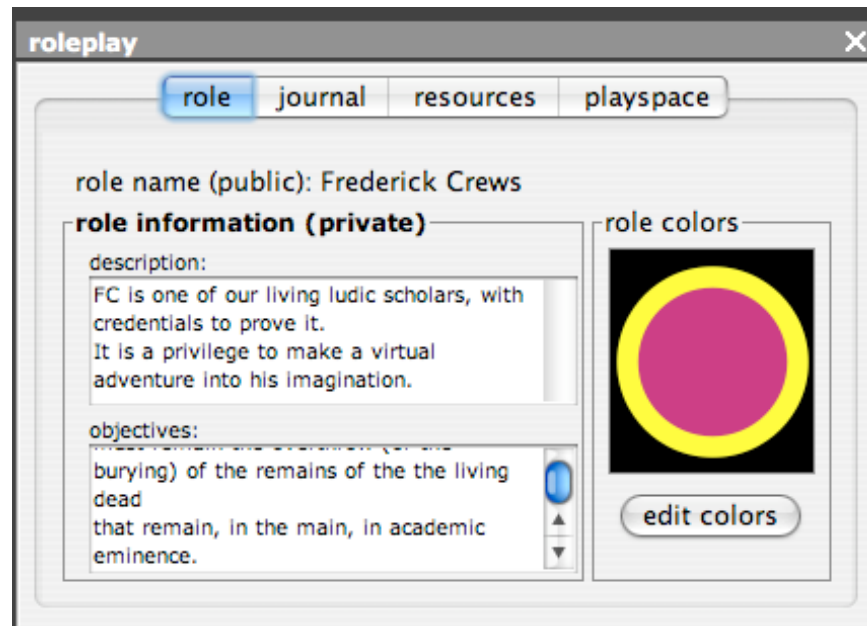
Roles are an integral part of the IVANHOE experience. By adopting and acting from the particular point-of-view recorded in your journal, you will gain a deeper appreciation of the documents, characters, and concepts at play in the game. You will also become a more masterful user of the interpretive perspectives from which you, *in propria persona*, interpret your world.

The roleplay journal has four tabs: role, journal, resources, and objectives. By default you come to the "role" state of this display space. This displays both your public role name and your private role, along with boxes with your private information describing this role and its objectives. You can edit this material at any time. We encourage you to fill it out at the game's outset and then return to it periodically in order to assess your own motives and learning. At the right is the

"role colors" function that allows you to edit the colors that display various features of your game moves (see below for further information on this).

The journal button gives you a text space, with a set of text-editing buttons, where players will keep a continuous commentary on the gameplay. This commentary, which is private, records a player's own interpretation of the meaning and purpose of his/her moves as well as the moves and gameplay of the others in the game. Like the role information field, the journal is an excellent site for reflection and self-awareness. If you are playing IVANHOE in a classroom setting, your instructor may require that you keep a role journal.

The resources button lists whatever public resources are being made available to all players. The "edit resources" button allows players to add or delete from this set of materials. Finally, the "objectives" button displays the game rules and objectives that were set by the game initiator. This information cannot be altered.

Player Circles and Color Options

A second basic setup task involves customizing the color of your player circle. Players are represented in the IVANHOE game visualization as small circles (described in detail below). As already noted, your various color options can be chosen from your role journal window. You can get the same editing functions by clicking the painter's palette icon on the left side of the screen. You will want to choose all of your color options with care.
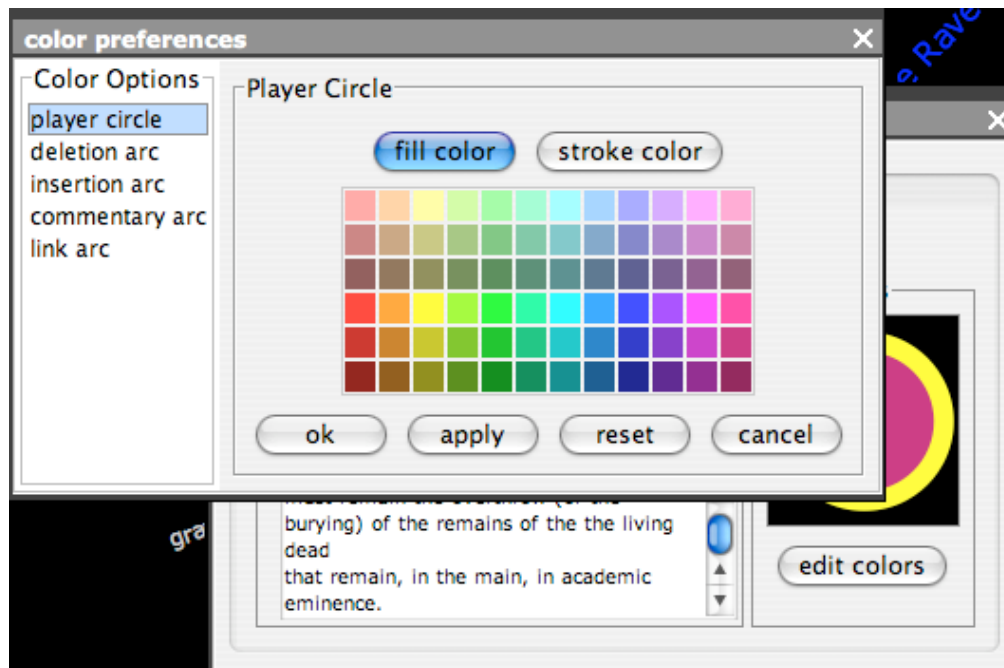
Clicking the painter's palette will open a color customization tool in which you can alter the stroke (or outer rim) and fill (or central color) of your player circle. "Player Circle" is selected by default among the color options in the list at left. Try out new colors for your circle's fill by clicking the colored squares in the main field. When you are ready to experiment with colors for your circle's rim, click the "stroke color" button and repeat this process. The buttons at the bottom of the coloring tool allow you to *cancel* all your alterations, *reset* colors to the system defaults, and *apply* the colors to the discourse field visible behind the window (this is particularly useful later in the game). Finally, you may save your changes by clicking *OK*.

You may also use this tool to customize the appearance of your deletion, insertion, annotation, and linking arcs — but this practice is described later, in the context of the IVANHOE visualization.

Now you are ready to begin playing IVANHOE.

Playing IVANHOE

IVANHOE is primarily an environment for facilitating communication in, with, and about a shared field of discourse. Players' actions, therefore, all center around acts of communication typical to humanities scholarship: creating, editing, and annotating documents; and connecting texts and concepts. More direct kinds of communication among players are also possible, as IVANHOE provides chat and forum-style messenging tools. This section describes all of these communicative actions and how you can use the IVANHOE environment to perform them. It is followed by a discussion of the IVANHOE environment's depiction of collaborative commmunication in a unique gameplay visualization.

And remember: all of the actions discussed below will be performed from the special perspective of your role! Players want to be aware that many points of view on the game play are always "in play", that each player see what is happening from a particular point of view. The interaction of these different perspectives and interpretations is what makes IVANHOE especially interesting and fun.   Players will find themselves responding not only to the objects in the discourse field but also to the players acting in that field.

Adding Documents

Players often wish to introduce new documents into the discourse field, which — at the game's outset — consists only of texts that may have been put there by the game initiator. Additions to the discourse field can take many forms. You may produce a letter written by (or to) your character. You might claim to have discovered a missing passage of one or another of the game's texts, or you may simply wish to bring a real-world document, such as a literary or historical text

complementary to the issues being explored in your IVANHOE session, into play. To add a document to the discourse field, click the blank-page icon at upper left.

Existing Documents: You are presented with the option of creating a new document or importing an existing one. If you wish to import into the IVANHOE playspace an image (in JPG or GIF format) or a plain text file (with a TXT extension, — ie. not a Word document) currently saved on your hard drive, click the "import existing" button. You will be prompted to browse your computer and upload the file, which will appear in the Playspace as another document wrapped around the central discourse field circle. Until you publish your move (see below), this document is only visible to you. Please note that any additions or deletions you make in this document will be presented to others as added or deleted text in your discourse field (a concept explained below), not as a seamless part of the document itself. In other words, unless marks of editing are a deliberate aesthetic effect, you should make sure that the document is in its desired form before uploading it.

New Documents: To use IVANHOE to create a document from scratch, choose the "create new" option which appears when you click the blank-page icon at upper left. A document editing window will appear, in which you'll see the blank page icon replicated.
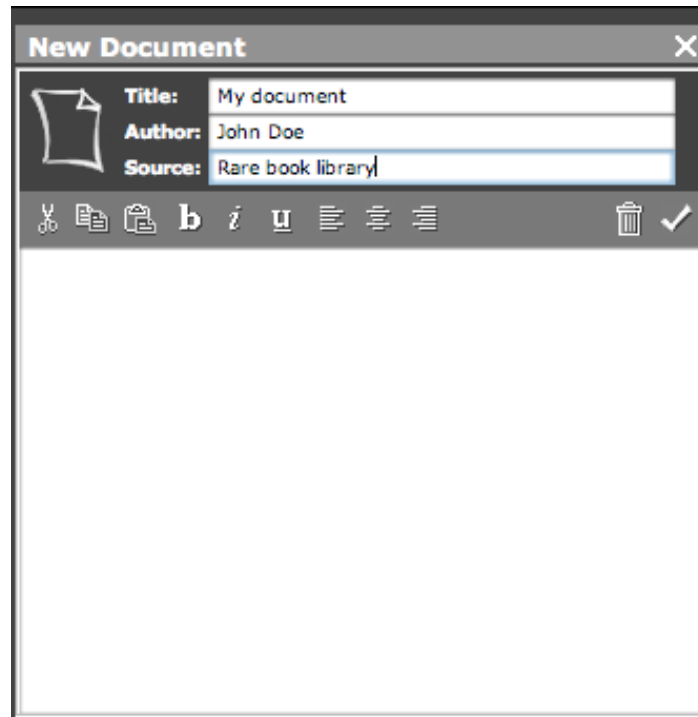
The first element to notice is the series of three blanks at the top of the document editor. Here you are prompted to give your document a title, indicate its author, and describe its source. The title is the only required field. The author of the document may be your role or some other individual or group. The source may include a date, place name, publication, or other indication of provenance. You may type directly in these blanks. Unlike other textual material associated with documents in IVANHOE, this information is not editable at later points in the game. Players are advised to proof title, author, and source fields carefully.

The main part of the editing window is a blank field in which you can type text. Typical word-processing features are available here, accessed from a toolbar immediately above the text field. These include: cut, copy, paste, boldface, italics, underline, left-justification, centering, and right-justification. (Customary keyboard shortcuts, specific to your operating system, also work inside the editor.) At the far right of the toolbar are two IVANHOE-specific icons. The trashcan icon allows you to cancel creation of your document and discard all its data. The check-mark icon allows you to adopt the document into your private view of the IVANHOE

discourse field. Remember that the document will not be visible to others until you publish your move.
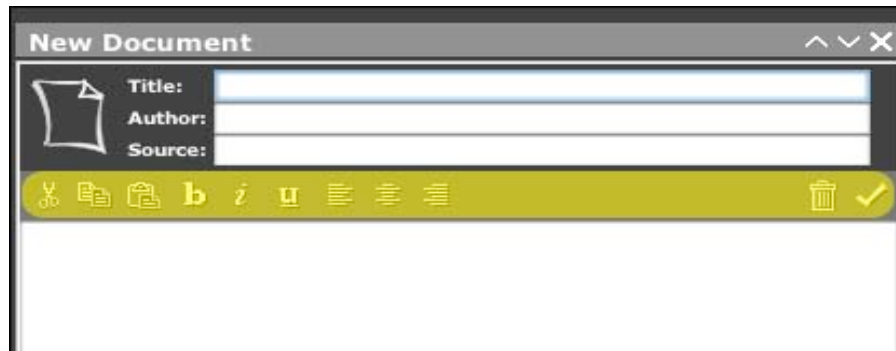

On the top, right-hand corner of the editor (as with all internal IVANHOE windows), you'll find a tool for dismissing the document from view. In this case, an attempt to dismiss your new document will prompt you to add it to the discourse field or discard it.

Editing Documents

Players' interaction with and within the IVANHOE environment typically takes editorial form. This mirrors the work of textual scholars, whose interests lie in exposing and commenting on historical changes to documents and who participate in documentary history by editing texts. You may be moved, from the perspective of your role, to add and delete text from documents in the discourse field, including the documents placed there by you and other players, and by your game's initiator. All documents are fair game for editing and when you do so a new revision is added to the discourse field.
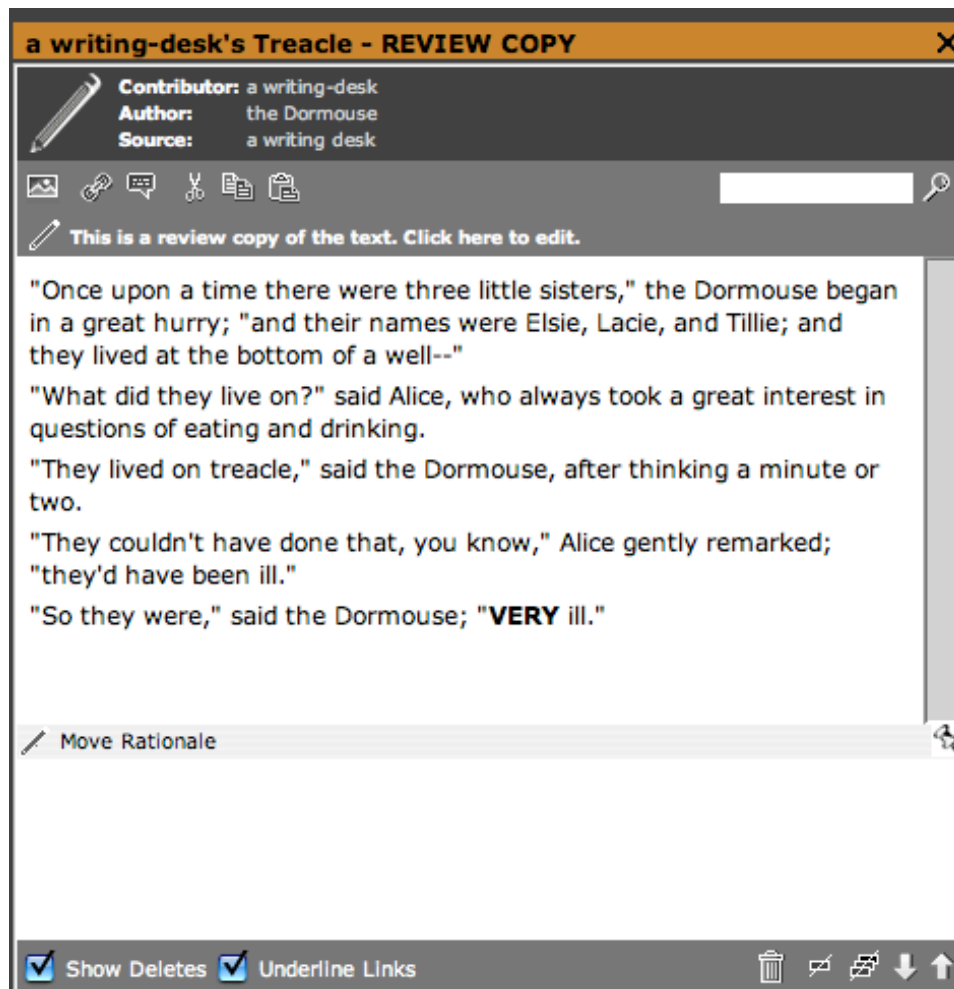
To begin editing a document, open it by double-clicking its title or highlighted region in the discourse field circle. If there is only one version of the document an

editor window will appear, but if there are multiple document versions you must select which one you want to inspect from the stemma view.
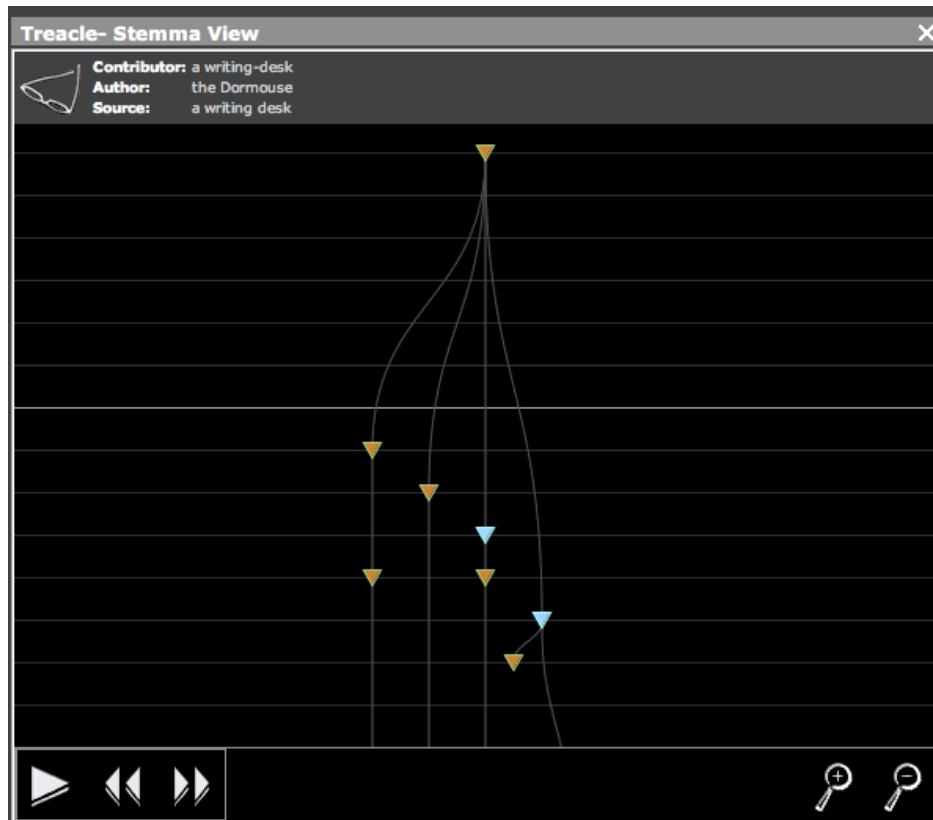
The triangles represent documentary versions with a common ancestry to the upper-most document. In other words, all documents connected by lines further down the screen are descendent variations created by players in past moves. If you hover the pointer over a triangle an information box displays which tells who created the document. Like the player circle visualization, color also indicates the document's relationship to the player.

To navigate the space, click the left and right time line controls to move up and down the display and use the magnifying controls in the lower right to zoom in and out. Clicking on a document triangle brings up the editor.

a writing-desk's Treacle - REVIEW COPY

Contributor: a writing-desk
Author: the Dormouse
Source: a writing desk

This is a review copy of the text. Click here to edit.

"Once upon a time there were three little sisters," the Dormouse began in a great hurry; "and their names were Elsie, Lacie, and Tillie; and they lived at the bottom of a well--"

"What did they live on?" said Alice, who always took a great interest in questions of eating and drinking.

"They lived on treacle," said the Dormouse, after thinking a minute or two.

"They couldn't have done that, you know," Alice gently remarked; "they'd have been ill."

"So they were," said the Dormouse; "**VERY** ill."

Move Rationale

☑ Show Deletes ☑ Underline Links

Note the phrase, *"This is a review copy of the text, click here to edit"* under the toolbar controls. Clicking it gives puts you in editing mode.

Place your cursor at the point at which you would like to add text to the document and either type or paste (using the clipboard icon in the toolbar) directly into the text field. Your additions will appear in blue. To delete text from the document, highlight it with your cursor and either hit the delete/backspace key on your keyboard or use the scissors icon in the toolbar. The text will appear stricken-out and in grey.

Images: You may also insert images saved on your computer into editable IVANHOE documents. Decide where you'd like to place an image and set your

cursor at that point. Use the picture icon in the title bar to open a tool which lets you browse your hard drive for GIF and JPG images. Locate the file and click "add image" to import it into the text.
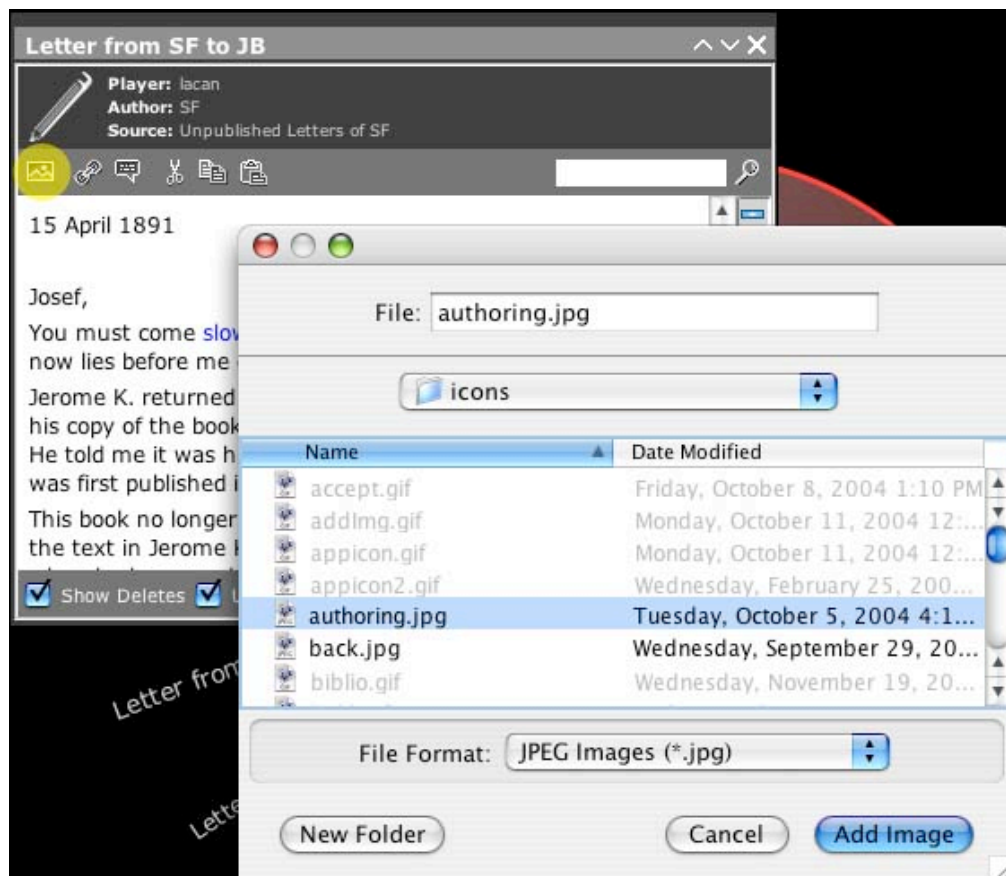

Other Tools: Some other features of document windows are worth noting here. Icons for the creation of links and annotations are found in the toolbar, and are discussed below. Along with cutting and pasting (only available in editable documents), it is possible to copy text — either with the copy icon or a system-specific keyboard shortcut — that you highlight in any document. Finally, two checkboxes at the bottom of the window allow you to toggle on and off the display of deleted text and underlined links. These controls can be very useful in increasing legibility when IVANHOE documents reach heavily-edited states.
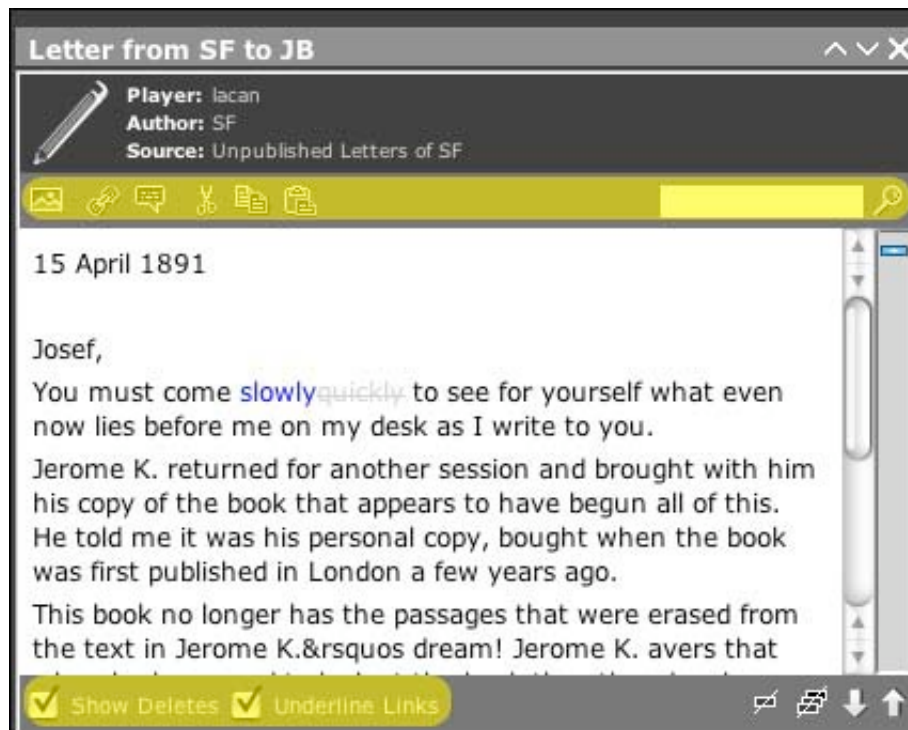
Annotating Documents

Annotation, or the insertion of critical commentary into the larger discourse field, is a primary editorial and interpretive act. The IVANHOE game therefore allows players to comment on passages of text, both within documents they have created or edited, and in edited versions belonging to other players. The process is simple. From any document in the game, you may highlight a passage of text and click the "annotate" icon. A small window appears, in which you are prompted to give your annotation a brief reference title, and type the text of your commentary in a text field. Click "OK" to insert your annotation into your chosen document. It will appear in a pop-up window when you or other players click on the underlined text that corresponds to your original selection. (To dismiss annotation pop-ups, click one time anywhere in the document *outside* of the pop-up itself.) Remember that, until you publish your move, this annotation and any other changes are only visible to you.
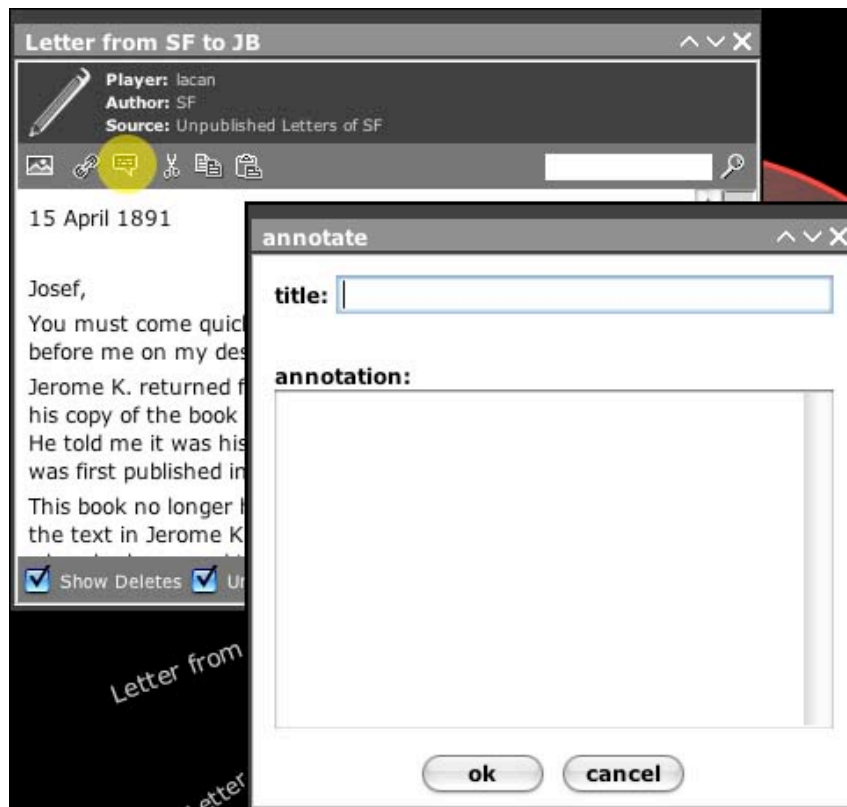
Linking

IVANHOE also allows players to participate in that basic act of electronic discourse, the making of hyperlinks. An IVANHOE hyperlink is more than a means of navigating from one document to another; it is the physical manifestation of conceptual connection being drawn by a player, from the perspective of his or her role.

Four types of link are possible: 1) a bi-directional link between two text strings in different documents; 2) a bi-directional link between two text strings within the same document; 3) a general and uni-directional link from a text string in one document to another document as a whole; and 4) a one-to-many link, in which one string of text links outward to many locations in the discourse field.

To create a link, simply highlight a passage of text and click the link icon in the document toolbar. A link editor appears and you can open any other document as the target of the link. Other document windows will have a button under the toolbar which says "link to this document" but it will change to say "link to this passage" if you select a region of the text. Enter in a rationale for the link and press "add link" to finish the operation.
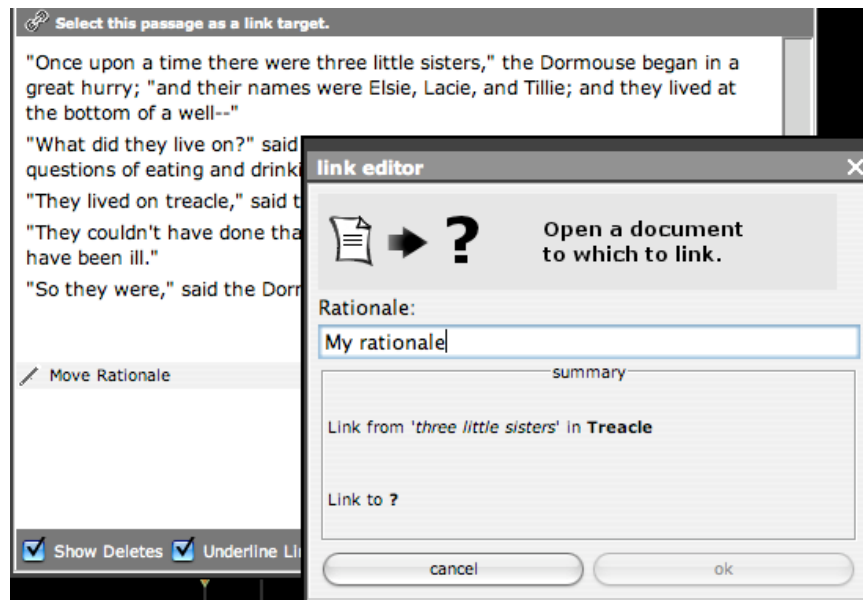
You can repeat this process as many times as you like, creating multiple outward links from your original highlighted text. Your links will be saved and are visible only to you until you publish your move.

Links appear in the discourse field as underlined text. When you click this text, you will "follow" the link, by opening up another document (type 3 above), by opening a document and jumping to its corresponding, bi-directional link (type 1 above), by causing your view of the current document to shift (type 2 above), or by opening a small menu of links from which you can choose (type 4 above).

When links are followed their rationale is displayed and you must click through to follow the link to its destination.
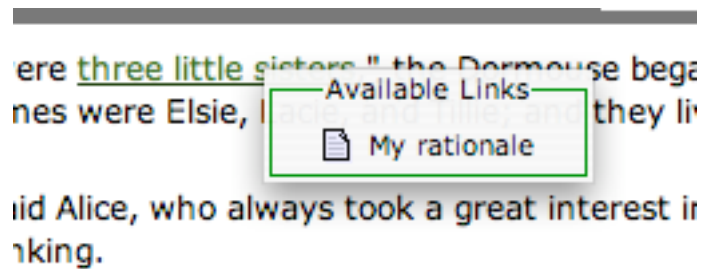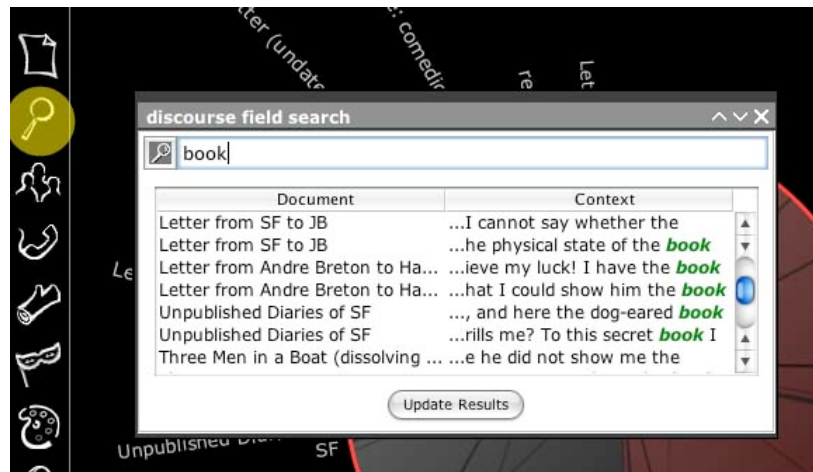
Searching

In a Document: You may search for text strings in any open document by using the search input box in its toolbar. Type your string and hit the enter/return key or click the small magnifying glass icon to search. Jump to the next instance of your search string by repeating your click or keystroke.
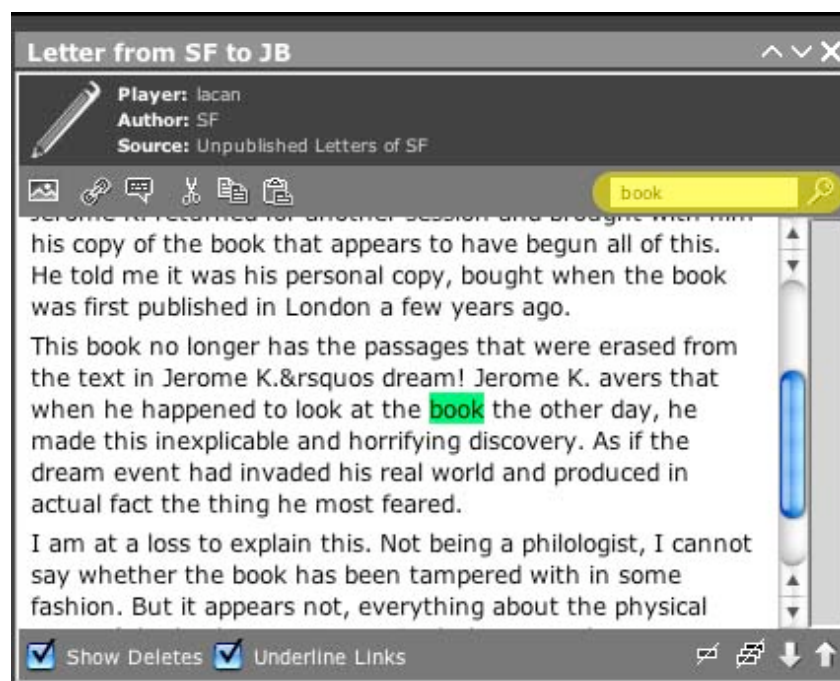

In the Discourse Field: The large magnifying glass icon on the left side of your IVANHOE screen allows you to search across all IVANHOE documents at once, and gives you a collated readout of matches. Simply type your search string in the

text-input field and hit enter/return or click the magnifying glass. Double-click any document in the readout to open it. You will jump in the document to your highlighted search string.


Because IVANHOE is a dynamic, multi-player space, the discourse field can alter at any time. If other players make moves while you are searching — or if you leave the search tool up while editing documents yourself — you will be alerted to possible changes in your search output. Click "update results" to take the altered discourse field into account.
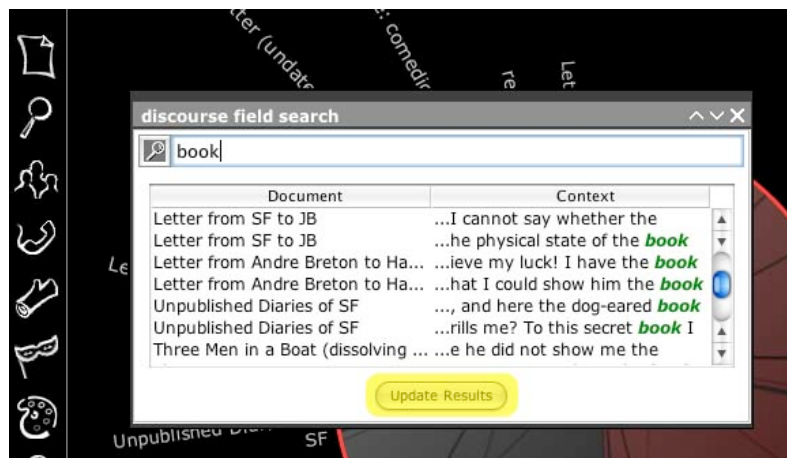
Using Actions

As you edit documents by adding, deleting, and annotating text and by inserting images and links, you will notice that small, blue boxes appear in a narrow field (the "gutter") along the right side of your document windows. These boxes represent your current (or "pending") actions, and mousing over one gives a brief summary of an edit you have made. If you click on an action box, its corresponding edit will come into view with a green highlight. (Notice that edits very close together on the page will be represented by a collapsed action box with a small + sign. Click these boxes multiple times to cycle through the actions they represent.) After publication of your move, the blue boxes representing pending actions turn purple — the color in which other players' action boxes always appear to you.
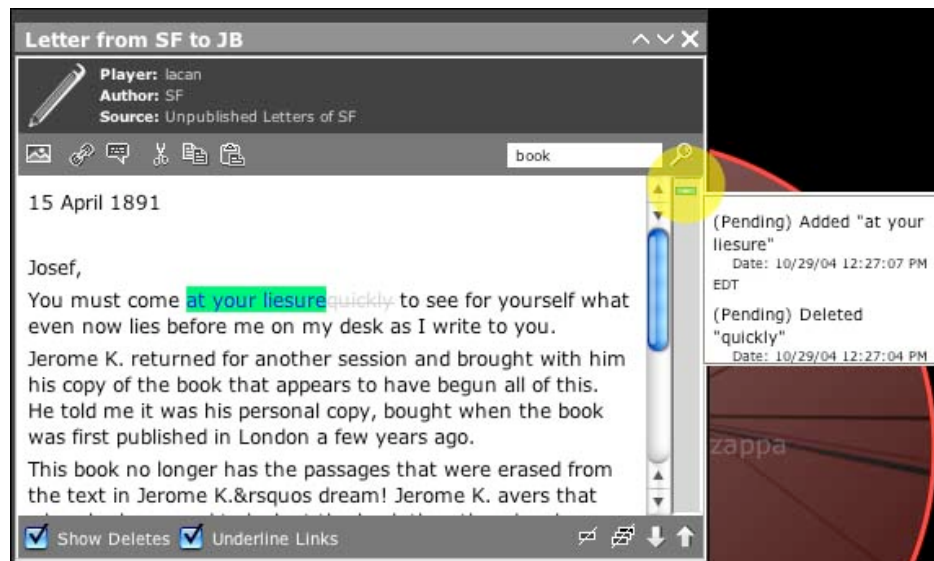
At the bottom of each document window, beneath the gutter, you will find a set of buttons geared toward locating actions (pending or otherwise) and removing unwanted pending actions. The arrow buttons help you move upward and downward through the actions in the gutter. If you wish to remove a single action, select it by clicking on its box or by highlighting it with the arrow buttons. Then

click the button showing a single action. If you wish to remove all your pending actions for this document, click the button showing multiple actions.
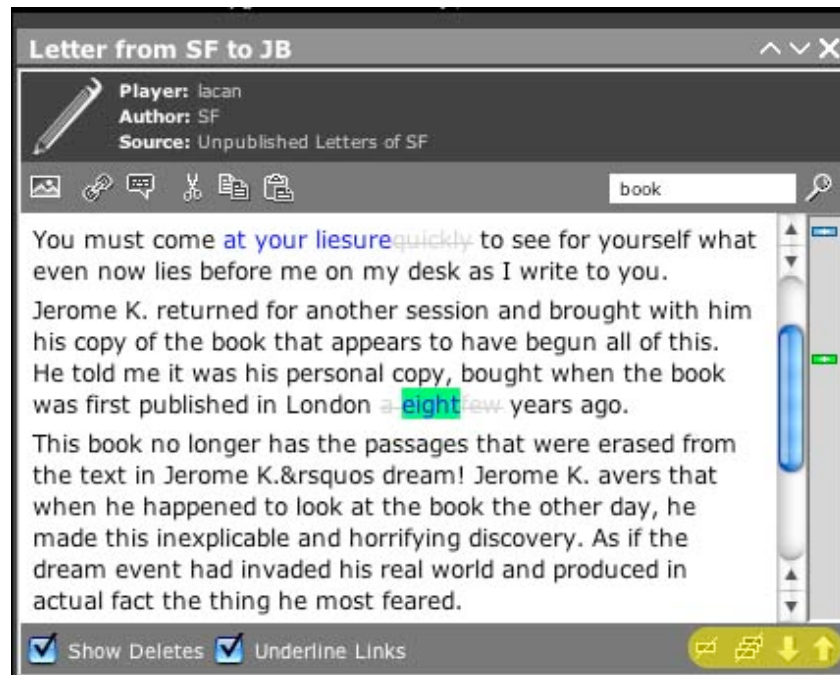
Publishing Moves

Until you post your additions, edits, annotations, and links as a "move" in the IVANHOE game, they are present only in your own view. When you complete a series of actions that seem, from the perspective of your role, to constitute a coherent group, make them public by clicking the thumbtack icon at lower left.

A window will pop up, displaying all your actions for review and prompting you to compose a "rationale" for your move. Here you may be as straightforward or mysterious, as descriptive or analytical, as you wish. This rationale will appear in the game history log and inside the discourse field itself, when players mouse over your circle while your move is displayed. It should contribute to players'

understanding of your move at a first reading, and help them remember its contents as they look over past moves in the log.

You may cancel publication at any time, returning to the discourse field for further modifications, or to remove specific actions from your move. (See Editing Documents above.) You may also elect to discard all actions from your move and start afresh, by clicking the trashcan icon on the left side of the screen.

If you exit IVANHOE without posting your move, your actions will be stored and you will be alerted that a move is in progress when you log out and log back in. But once you click the "publish" button inside the publication dialog box, your move becomes part of the shared discourse field.


Forum and Chat: Extra Communication

Two types of in-game communication stand apart from player moves. The first happens in IVANHOE's message forum, accessed from the forum icon at left. The second, even more ephemeral, uses IVANHOE's built-in chat functions, accessed

from the telephone icon at left, or by clicking on the blinking phone when it appears at the bottom of the screen. (This occurs to let you know that someone wishes to chat with you.)

Forum: Read messages in the bottom field of the forum by selecting them with your mouse in the list at top. You may sort messages by date, sender, and title. Post to the forum by clicking the "create new message" or "respond to current message" buttons. A new window with basic formatting buttons (cut/paste, italicize, etc.) will appear. Type your message in the editing field. Unless you are responding to a past item in the forum, you should give your message a new title. Click "submit" to post it to the forum.
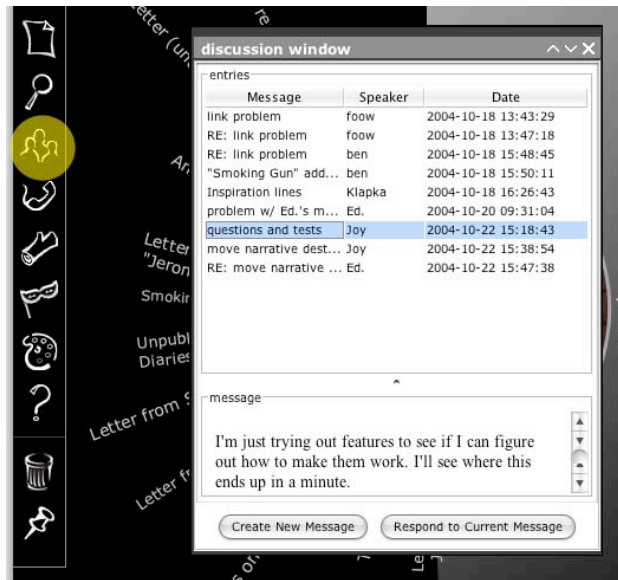
Chat: To chat, click the telephone icon. A small window appears.
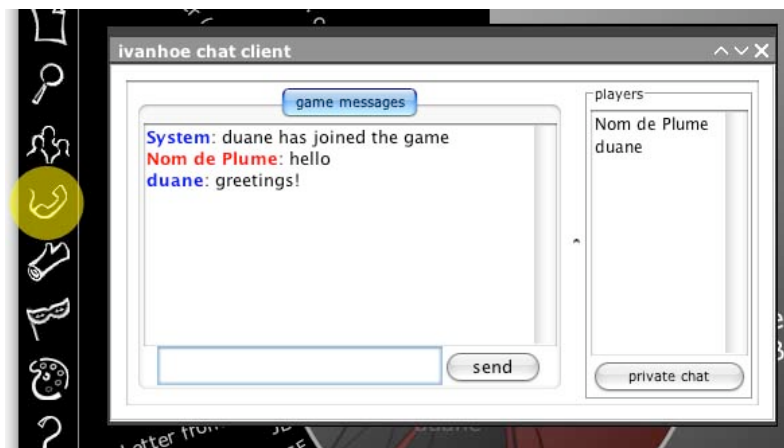
 On the right, you'll see a list of players currently online and available for chatting. All of the players listed can see chat and system information that appears in the "game messages" field to the left. (System information includes automated messages

when players log in and post moves.) To send a chat message to all players, simply type in the blank at the bottom of the chat window, and hit your return key.

You may initiate a private chat with another player by selecting that player's name in the chat window and hitting the "private chat" button at bottom right. Notice that two buttons are now present at the top of the window. One says "game messages," and the other prints the name of the player with whom you have initiated a private chat. Toggle between the public and private spaces by using these buttons. Send chat messages to either space as usual. You may initiate concurrent private chats with more than one player, but only two players can converse in a private space at once.

Understanding the IVANHOE Visualizations

IVANHOE's graphical interface helps players manage and understand their collaborative creation of a complex, evolving discourse field. Like all graphs and charts, however, the IVANHOE visualization is an abstraction and therefore to some degree reductive. In other words, you are certain to appreciate aspects of IVANHOE that are not represented graphically in its interface — such as conceptual connections among player moves and subtle implications of textual transformation. This is because you are smarter than a computer. Still, algorithmic representations of human phenomena (such as IVANHOE gameplay) offer novel perspectives and serve as aesthetic provocation to new action and interpretation.

Version 2.0 of the IVANHOE software presents two types of visualization: the Player-Move visualization and the Stemma, or docu-centric visualization (see below for the latter). IVANHOE's developers also plan to incorporate simple data export features into the system, so that independent digital artists and information

scientists can build alternate, computer-generated visualizations of IVANHOE activity.

The Circular Field

The circular discourse field is IVANHOE's primary interface and visualization structure, around which all the documents brought into play are "wrapped" and in which players and player actions are depicted. Texts wrap literally around the document circle in a clockwise fashion, from their first letter to their last in such a way that — if the discourse field contained only one document — its first letter would be at the 12 o'clock position and its last at 11:59. When new documents are added to the field, they begin wrapping where the last document left off, causing all documents to shift and resize, relative to the constant discourse field circle. Documents can also change size in accordance with player actions, a concept explained as an "attentional interface," below.

Document titles extend outward from the circle (in a brand of radiant textuality) and are truncated when they are too long to be displayed. Mousing over document titles reveals a grey highlight corresponding, on the circle, to the region taken up by that document. The whole highlighted field is a sensitive area in the IVANHOE interface, which will (on double-click) open up the listed document for editing or review.

Arcs, Rays, and Lines

Players who have submitted moves appear as small circles inside the larger discourse field circle. A system of arcs, lines, and rays extends from these players outward, either to specific positions along the discourse field circle (positions that correspond to word or character locations in texts as per above), or to other players in an expression of relation. These markings, generated each time a player submits an IVANHOE move, are a graphical representation of textual activity. Taken in conjunction with other players' moves, and arrayed over time (see below), they contribute to an animated visualization of an entire IVANHOE game.

Inspiration Lines: Inspiration lines are dotted lines that extend between player circles and are generated automatically through acts of linking, annotation, and adoption (the practice of copying and pasting text from one player's document to one's own). These lines are meant to show a nonspecific relation that emerges between two players when they begin to comment on, play with, and utilize one another's texts. The lines take on the color of the rim of the player circle from which they extend.
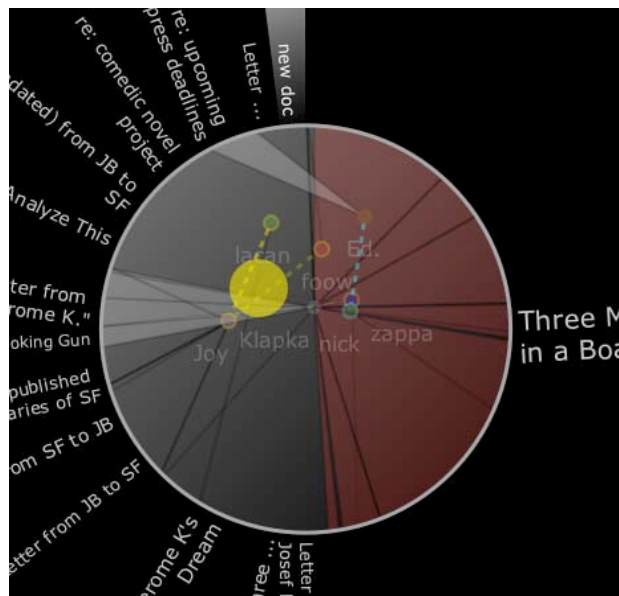
Arcs and Rays: Rays are lines that extend outward from player circles to specific locations on the discourse field circle that correspond to beginning and ending points for textual edits (additions and deletions) or for linked or annotated text. Arcs are the angles subtended by these rays and can be quite large (if, for example, a player has deleted most of a document's text) or so small as to be represented by a little wedge (if, for instance, a player annotates a single word or character in a large document). When you mouse over a ray, you will see a summary of the action it represents.
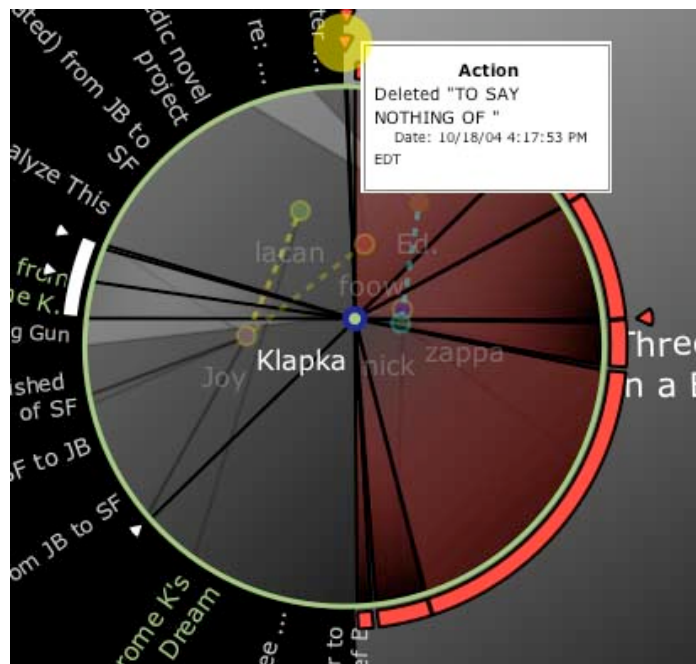
Custom Colors: Arcs and rays are color-coded. When you first log into the IVANHOE playspace, arcs and rays that represent deletions will appear orange. Additions are aqua-colored. Linking rays and arcs are purple, and annotations appear in yellow. If you wish to change the default color settings, use the color

customization tool to modify them in the same way you adjusted your player circle
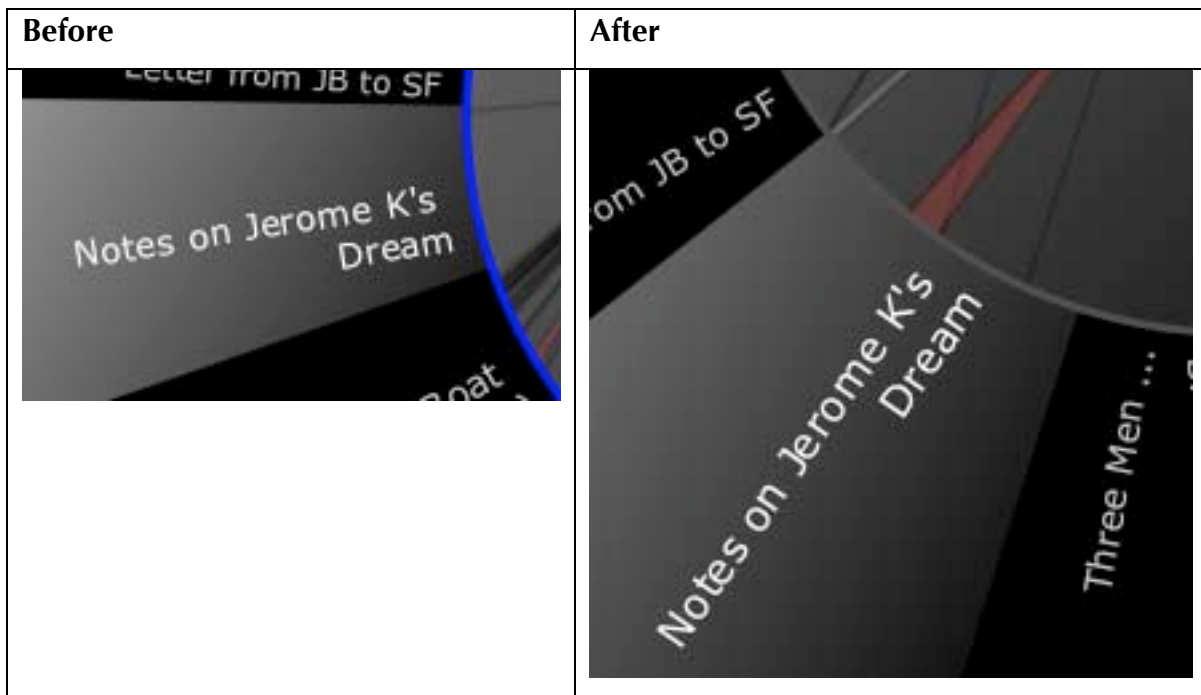color.
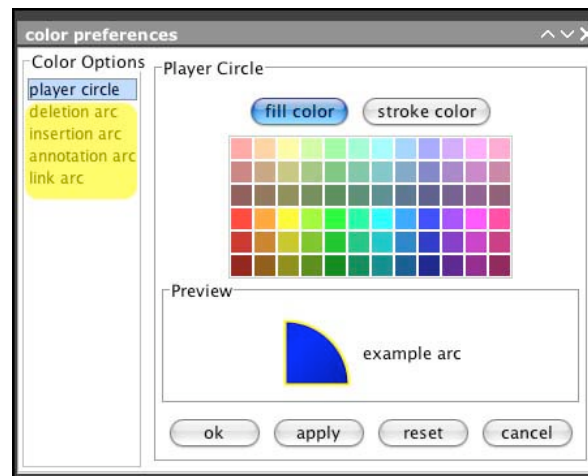
The color palette is as much an analytic as an aesthetic tool. It can be particularly
useful for drawing out certain types of gameplay in a sometimes-cluttered
visualization. For example, if you are especially interested in deletions from
discourse field texts, and do not wish to be distracted by players' additions or
linking and annotation actions, you may choose a bright color for deletion arcs and
rays and set all other elements in shades of grey. Your color preferences are saved
to your local computer (ie. not stored remotely on the IVANHOE server), so if you
log into IVANHOE on a different machine, your color settings — with the
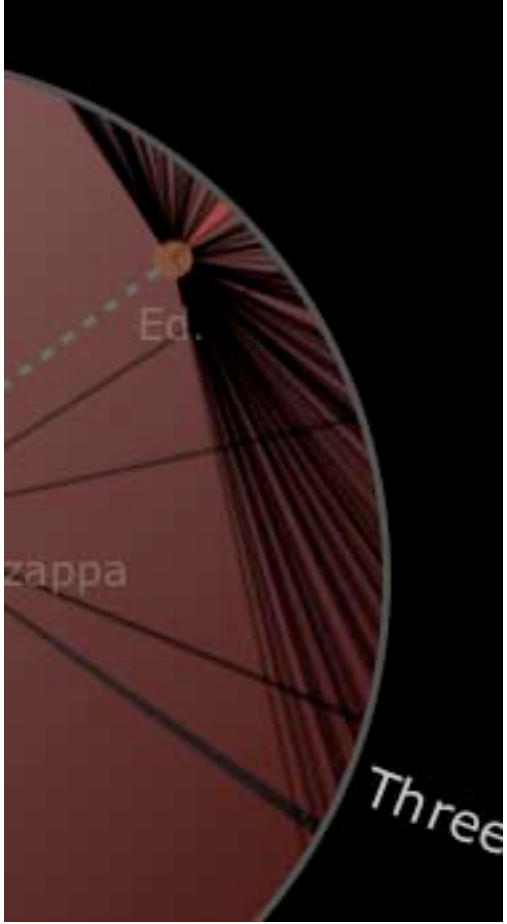exception of your player circle color — will change.

The Attentional Interface

Because the IVANHOE discourse field is a dynamic space, the positions of texts
along the rim of the central circle will change over time as new documents come
into play (see above). Their relative sizes (ie. the percentage of the circle individual

documents take up) also changes as players concentrate transformative actions in specific textual locations. IVANHOE represents the power of its players over the shape of the discourse field in terms of an *attentional interface*. A document to which much transformative attention is paid (in the form of additions, deletions, annotations, and links) will grow in size, covering more of the available circle than will a document which players ignore.

Before	After

In a similar fashion, the colored player circles that appear inside the discourse field circle are physically drawn toward those regions of text in which players perform editing, linking, and annotation actions. This motion is calculated on a player-by-player and move-by-move basis, as rays and arcs appear in the visualization, and constitutes a kind of emergent, gravitational field. Notice how your position in the discourse field changes as you make moves, and how other players migrate within the shared space.

| Before	After

The graphic depiction of these shifts in attention can increase your awareness of the dynamics of gameplay and your critical self-consciousness about your own actions in the discourse field. We hope you will understand IVANHOE's ever-changing visualization as an aesthetic provocation to further thought and action. You see how the computer interprets your "position" *vis-a-vis* the texts in play.

What form will your response take?

The Stemma Visualization

IVANHOE contains a second visualization that maps the emergence of different versions of a work that began its life as a single, specific IVANHOE document. When players make changes into documents they are in effect creating new versions of the documents. A map of the history of the emergence of these documentary versions is extremely useful if one is trying to understand the significance of the gameplay.

The stemma visualization only emerges when at least two versions of a document have been generated. Clicking on any of the works arrayed on the circle of the discourse field will bring up the stemma visualization window.
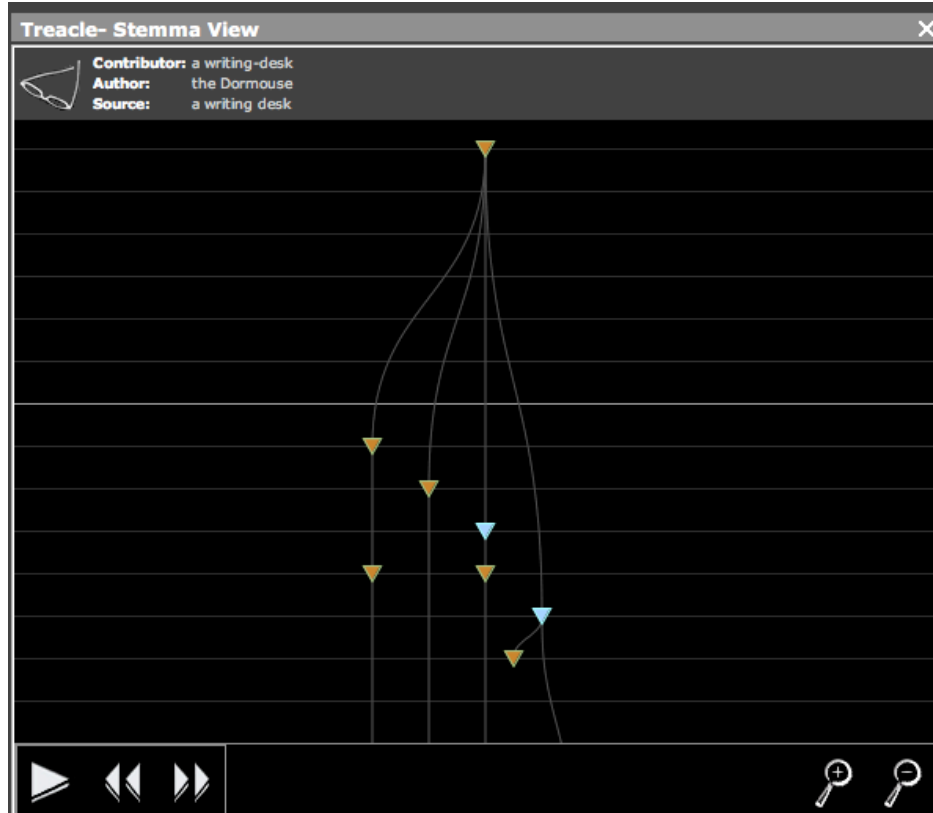
The display consists of small triangles that locate a new documentary version of the work, and these circles are color coded to indicate the player who created the document. Clicking on any of these triangles will bring up a window with the document. The lines connecting the triangles track the history of each document. Note that documents can emerge out of any of the documentary versions in the field (not just the initial document). Note also that if a player wishes to introduce an entirely new document with the same name as an in-play document – for example, if one wanted to introduce a manuscript text version of a poem that was already in play from a print source – this document would come into the game play as an entirely new document.

To facilitate study of the stemma and its documentary relations, players can put their cursors on the stemma and move it around by holding down the mouse button.

Understanding Discourse Fields

Shared and Private Fields

A "discourse field" is the documentary manifestation of an evolving, socially- and subjectively-constructed set of ideas. In IVANHOE, the discourse field contains all the documents that have been brought into a particular playspace, together with all the transformations they undergo over time. Players inhabit the discourse field, and alter it through their actions. However, just as every interpreter of a work of literature — despite some shared material and common assumptions — understands or appreciates that work differently, every player in IVANHOE

possesses and acts in his own discourse field. These fields merge in the visualization, so that all players can be depicted in the same space for purposes of contrast and comparison. Essentially, though, each player owns and acts on his own copies of the documents in the field, except in those cases in which s/he comments explicitly on, or links to, another player's version of a document.

This feature of IVANHOE explains the distinction drawn above between fully editable documents (those with neutral grey title bars) and "review copies" (documents with colored title bars in which only links and annotations may be made). When you open a review copy of a document, you glimpse another player's discourse field. You may comment on, copy text from, or create links to such documents, but you are not enfranchised to alter them. Nor may other players edit your texts.

We encourage you not to think of these ground rules for operating in discourse fields as restrictions, but rather as a social contract — an appreciation of the subjectivity inherent in humanities interpretation. IVANHOE players fashion their own, overlapping worlds. The following sections describe the navigation and use of discourse fields in more detail.

Player Colors and Selection

Players choose unique color combinations for the small circles that represent them inside the larger discourse field. These colors carry over into two interface and navigation features of the IVANHOE game. The first, inspiration lines, is described above. The second involves the concept of shared and private discourse fields, and serves as an aid to understanding the ways in which these fields overlap.

All players who have made moves in an IVANHOE game appear in the form of player circles in the tray on the right side of the screen. Mousing over these player circles reveals the names of players' roles and highlights them briefly in the central discourse field. Clicking on a player circle — either in the tray or in the field itself — causes that player to be "selected" in the visualization. This means that the player's actions (additions, deletions, etc.) are highlighted and detailed to a greater extent than those of other players. In addition, the selected player circle, both in the discourse field and in the tray, is highlighted with a slightly thicker line.
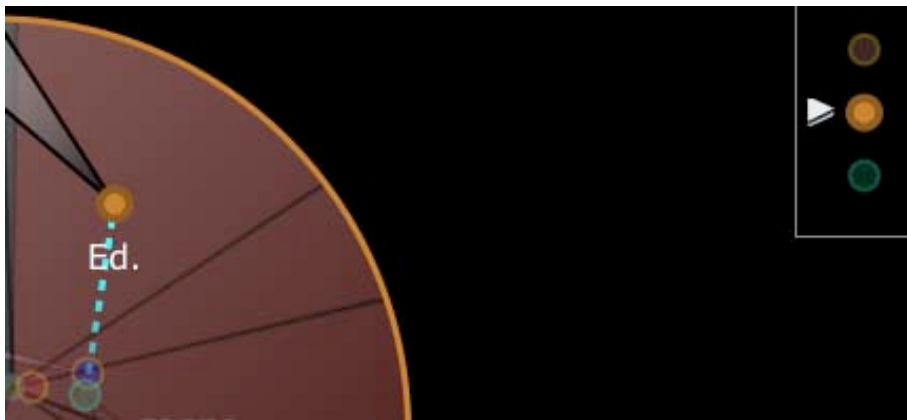
Selection persists over time (and throughout any timeline operations) until another player is selected, or until the selection is deliberately turned off. This is done by clicking the selected player circle a second time, or by clicking anywhere else inside the central discourse field circle.

Another result of selection is that the highlighted player's private discourse field comes to the fore, and any document you open during the selection of that player will be an uneditable review copy, rather than the editable version residing in your own discourse field. (Remember that, even in review copies, you may annotate, link, and copy text.) These review copies will display title bars in the appropriate color and bear the selected player's name. To access an editable version of any document instead, either select your own player circle or de-select all players and then simply double-click the document's title.

When you have selected a player, the titles of all discourse field documents edited
by that player will change color to reflect his involvement. This is just another
visual reminder that you are looking into another player's discourse field, but it also
serves to draw your attention to documents to which *that player* has attended.
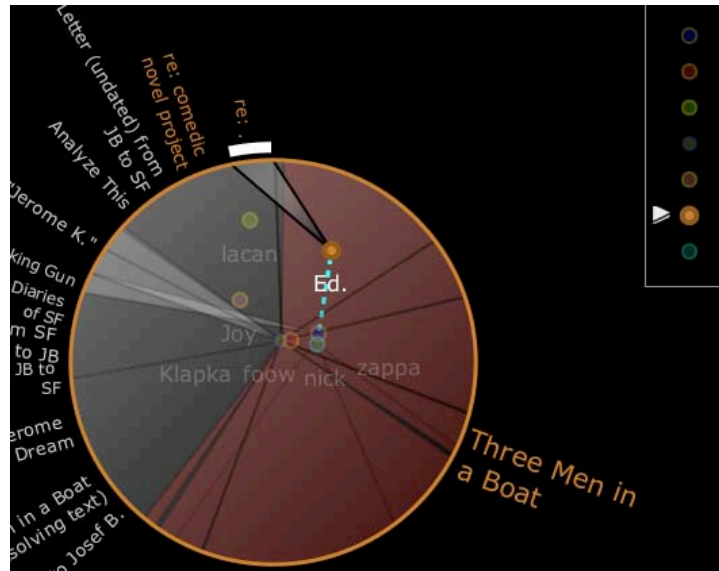
Using the Timeline and History Log

Because the implications of individual moves only unfold over time, and because
players frequently wish to consult and refer to the history of play, we have
developed two important interface features that manage and display temporal
aspects of an IVANHOE session. These are the timeline and history log.
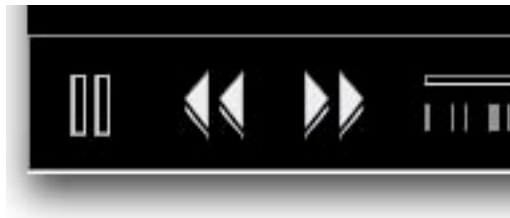
Timeline

A timeline extends along the bottom of your IVANHOE screen. This line depicts
player moves in the form of a sequence of vertical lines. A triangular indicator rests
on the line. This indicator points at the move currently displayed in the discourse

field visualization at the center of the screen. Notice that, as you select a player in the discourse field or tray, his moves are highlighted in the timeline, using his chosen player color.

At the left of the line are three control buttons that help you manage timeline operations. The first button causes the discourse field visualization to *play* forward in an animated fashion from your indicated point in time to the most recent move, or until you halt the animation by clicking it again (in *pause* form).


The other two buttons are *forward* and *back* controls, which cause the timeline indicator — and therefore the display — to jump in time to the next or previous move. By default, when you enter a game the time line's triangular indicator will be positioned at the current state of gameplay – i.e., at the end of the time line.

The timeline is keyed to IVANHOE's history log, described here.

The IVANHOE History Log

Access the history of your IVANHOE session by clicking the log icon on the left side of the screen.
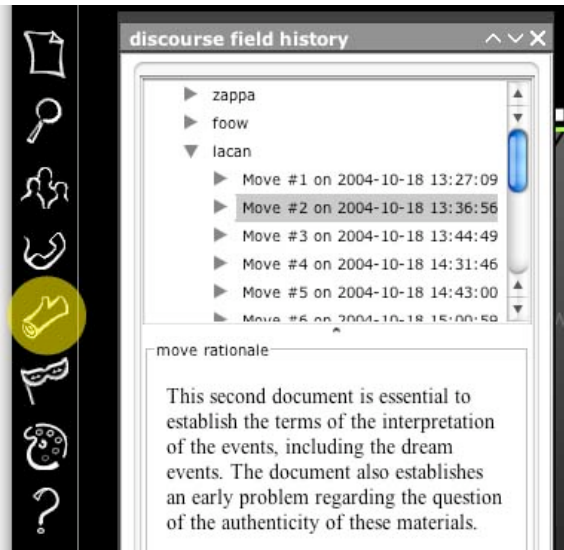
You may choose one of four organizational schemes for the log. Click the "roles" tab at bottom to see a listing of all players who have made moves. Click once on a player's name to select him in the discourse field. Double-click the name to reveal a list of the player's moves, in chronological order. Clicking any of these listed moves causes the timeline to jump to the move and the discourse field to display it. By double-clicking the move, you can open a list of all the actions that were executed in the move. Double-clicking the listing for any individual action will cause the document in which it occurred to open. The action you chose will be highlighted in the document display.
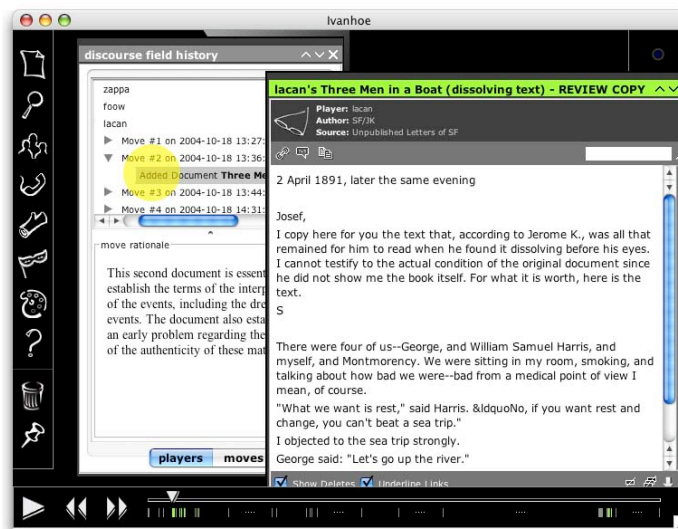
If you select the "moves" tab at bottom, you will see all moves listed in the order of their occurrence. Navigate and use this display in a similar way.

If you select the "documents" tab, you will see a list of all the documents that have been made part of the gameplay. Clicking the triangle to the left of each document will expose the different versions of the document that have been created in the game, and from there you can track down to the specific actions that were made in the document. Clicking on any action will open the document window and highlight the action.

If you select the "document stemma" tab, you will see a similar view to the "documents" tab, except that it expresses the ancestral relationship between documents.

Finally, the log is useful because it displays the rationales players compose for each move they make. (These rationales also appear in the discourse field itself, when you mouse over the circle of the player making the currently-displayed move.)
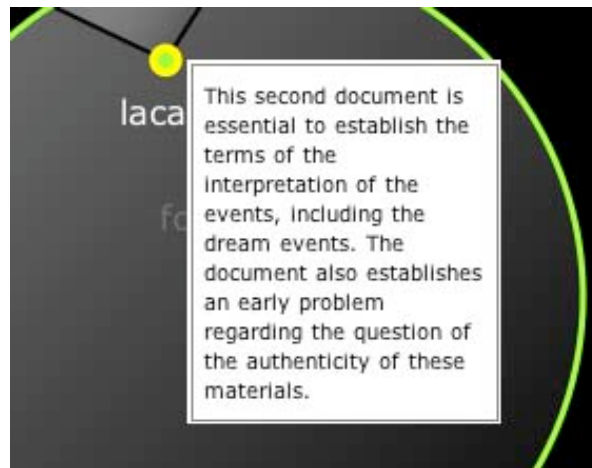
Your attention to other players' move rationales — and to the careful composition of your own — will be rewarded in richer IVANHOE play.

Further Reading

- Jerome McGann, "Like Leaving the Nile: IVANHOE, A User's Manual"
  http://jefferson.village.virginia.edu/~jjm2f/old/compass.pdf
- Special Issue of *Text Technology* (12:2, 2003)
  http://texttechnology.mcmaster.ca/
    - Johanna Drucker and Geoffrey Rockwell, Introduction: Reflections on the Ivanhoe Game
    - Jerome McGann, Texts in N-Dimensions and Interpretation in a New Key
    - Johanna Drucker, Designing Ivanhoe
    - Chandler Sansing, Building the Ivanhoe Game for Classroom Flexibility
    - Bethany Nowviskie, Subjectivity in the Ivanhoe Game: Visual and Computational Strategies
    - Geoffrey Rockwell, Serious Play at Hand: Is Gaming Serious Research in the Humanities?
- Special "Innovations" Issue of *Romantic Circles Pedagogy Commons* (January 2005) *http://www.rc.umd.edu/pedagogies/commons/innovations*
    - Jerome McGann, IVANHOE: Education in a New Key
    - Jerome McGann and Johanna Drucker, "Fare Thee Well!": an IVANHOE Demonstration (Flash design by Laura Mandell)
- Related Groups
    - SpecLab (Speculative Computing Lab @ UVA)
      http://www.speculativecomputing.org/
    - ARP (Applied Research in Patacriticism) *http:/www.patacriticsm.org*
    - NINES (Networked Infrastructure for Nineteenth-Century Electronic Scholarship) *http://www.nines.org/*